Service Manual

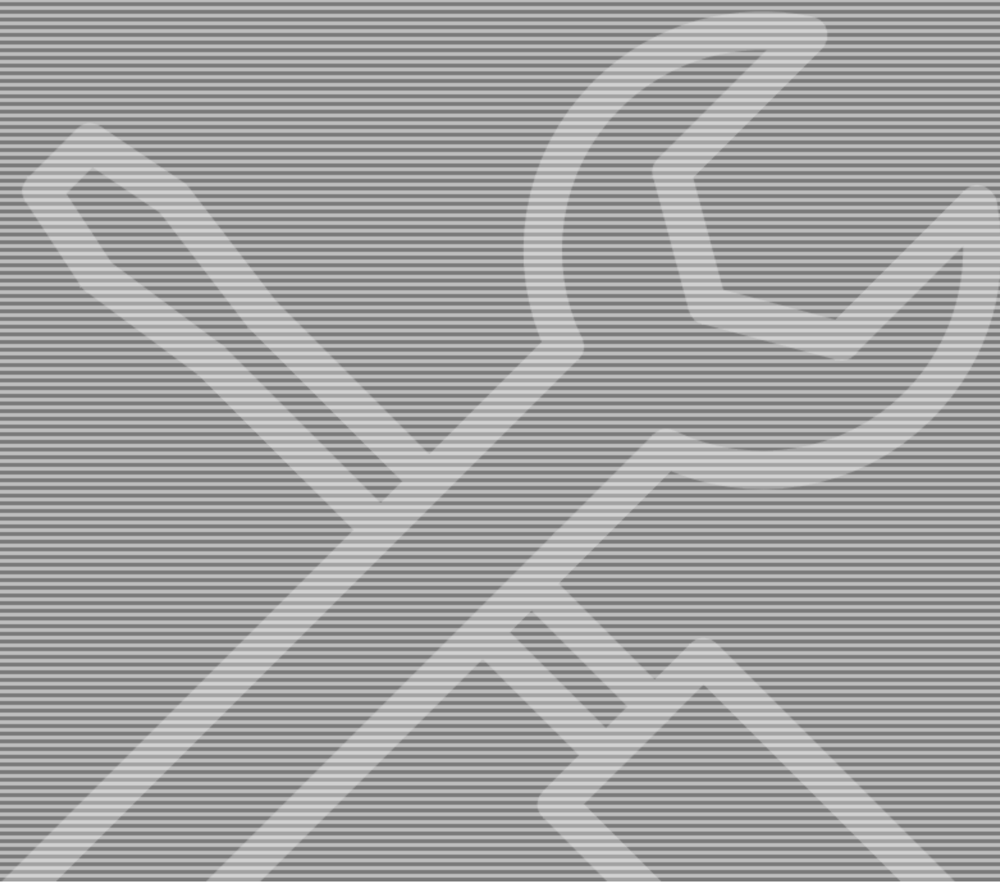
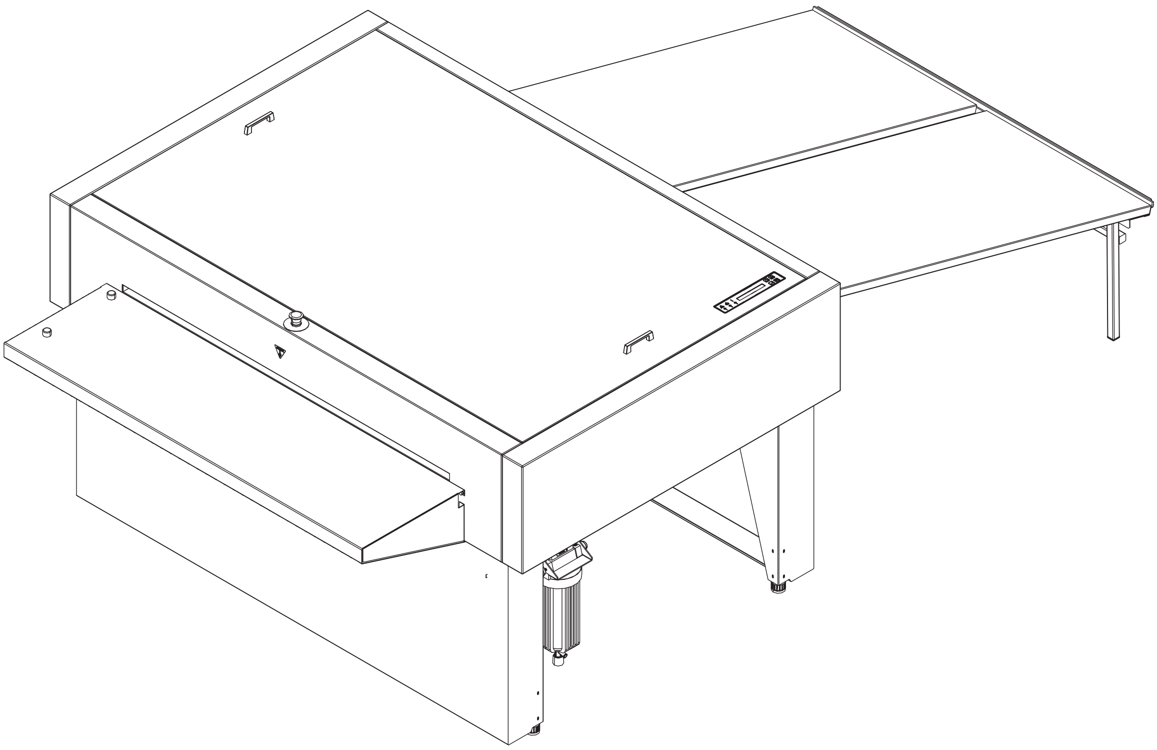


Plate Processor+ 125

Service Manual

Plate Processor+ 125



Edition BB, November 2012
This book has part No. 10065164

This manual is for Service Technicians only.

The directions given must not be followed by unauthorized personnel.

Always read the *Safety Instruction Manual part No 21741* before installing or operating the equipment.

This manual is published by: **GLUNZ & JENSEN A/S**
Selandia Park 1
DK-4100 Ringsted
Denmark
Phone:+45 57 68 81 81
E-mail: gjhq@glunz-jensen.com
Internet: www.glunz-jensen.com

Part 0: General information

Reservations

- This manual was written and illustrated using the best possible information available at the time of publication.
- Any differences between this manual and the equipment reflect improvements introduced after the publication of the manual.
- Changes, technical inaccuracies and typographic errors will be corrected in subsequent editions.
- As a part of our policy of continuous improvement, we reserve the right to alter design and specifications without further notice.

Notes, cautions, and warnings !

Throughout the manual notes, cautions, and warnings are written in bold like the example below:

Always replace a fuse with one of the same size and rating as the old one.

Symbol	Meaning	Explanation
	Note	The operator should observe and/or act according to the information in order to obtain the best possible function of the equipment.
	Caution	The operator must observe and/or act according to the information in order to avoid any mechanical or electrical damage to the equipment.
	Warning	The operator must observe and/or act according to the information in order to avoid any personnal injury.

Other manuals

Please see description of "Manuals available for the plate processor" later in this chapter.

The processor

Approvals

- Approvals will appear from the labels attached to the name plate or the frame part of the processor.

Unintended use of the equipment

Glunz & Jensen A/S do not take any responsibility for any damage or accidents caused by unintended use of the equipment:

- As the equipment is certified by accredited test laboratory (UL International Demko A/S) it is absolutely prohibited to make any modifications, electrical nor mechanical, of the equipment. If however this prohibition is disregarded, Glunz & Jensen's warranty will no longer apply and the certification labels for UL, C-UL, and CE certification of the equipment shall be removed as the certification will no longer apply to the equipment.

Intended use of the equipment

- Development of photographic materials as specified in “Technical specifications” in Part 1 in this manual.

Installation

- Never install the processor in explosive environments.
- It is the responsibility of the owner and operator/s of this processor that the installation is made in accordance with local regulations, and by engineers authorized to carry out plumbing and electrical installations.
- Installation, service and repair must be performed only by service technicians who are trained in servicing the equipment. The installation procedure is described later in this manual.
- The manufacturer cannot be held responsible for any damage caused by incorrect installation of this processor.
- The processor is intended for installation in a restricted access location only.

Technical data

- Observe technical data from the processor name plate and from Part 1 in this manual.

Chemicals

- It is the responsibility of the owner of this equipment that data is available concerning possible health risk from the chemicals used with the equipment.

"End of lifetime" disposal

The equipment is designed for easy disassembling. All disposal of parts from the machine must be made according to local regulations with special regards to following parts:

- For recycling purposes significant components are marked with material specification according to the ISO 11469 standard.
- PVC, tank etc., must be sent to a waste deposit with recycling in view. Alternatively the PVC can be incinerated at a suitable incinerating plant.
- PCB's and other electric equipment must be sent to a suitable waste deposit.

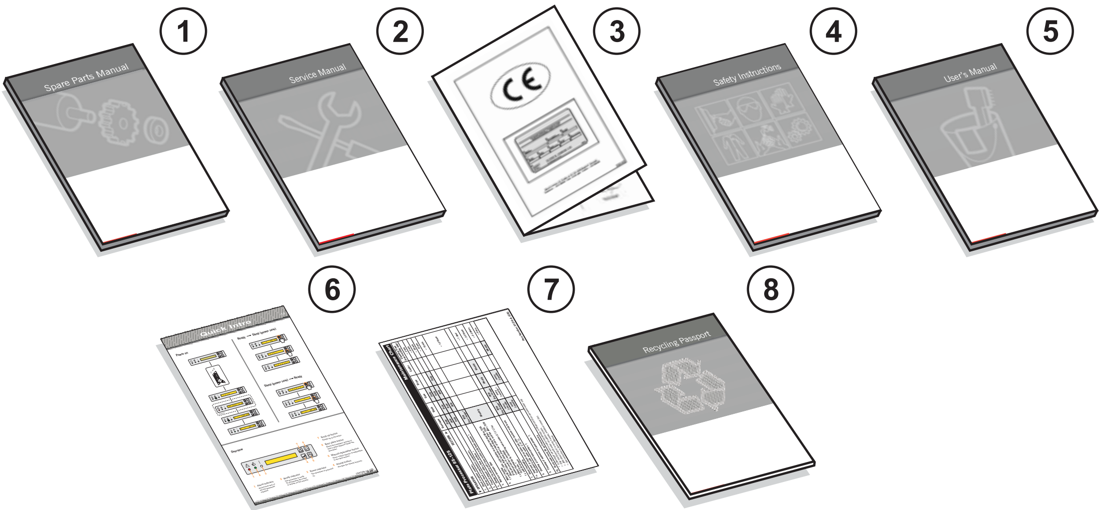
Service assistance

- If help is needed to correct any problem with the equipment, please contact your local supplier.

Table of contents

Manuals

A complete set of manuals consists of the following:



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Service manuals

The manuals listed below are for service technicians only. In addition the service technicians will need the manuals listed opposite as "User Manuals".

Spare Parts Manual, Plate Processor (1)

Language: English
Contents: Spare parts

Service Manual, Plate Processor (2)

Language: English
Contents: Technical specifications
Installation
Functional description
Maintenance
Troubleshooting
Electrical diagrams

User's manuals

User's manuals available for the equipment:

CE Declaration Of Conformity (3)

Languages: 26
Contents: Survey of the directives to which the equipment conform

Safety Instruction Manual (4)

Languages: 28
Contents: General safety information

User's Manual, Plate Processor (5)

Languages: 5
Contents: Operating and cleaning procedures

Quick Intro, Control Panel (6)

Languages: 5
Contents: Quick guide to control panel user functions

Maintenance Chart, Plate Processor (7)

Languages: 5
Contents: Maintenance instructions

Recycling Passport, Plate Processor (8)

Languages: English
Contents: Unit material recycling information

Keep the manuals with the machine for reference at all times.

Part 1: Technical specifications

General environmental information

The processor does not contain

- Ozone depleting substances according to Montreal protocol
- Asbestos
- Polychlorinated biphenyl or Poly- Cyclohexylenedimethylene Terephthalate
- Mercury
- Cadmium
- Lead as additive to plastic parts

Plastic parts

Significant plastic parts are marked according to ISO 11469.

Batteries

No batteries in this equipment.

End of life

Estimated product life:	10 years
Spare parts and service period:	7 years after last sales.

Recycling

The processor should be disposed at a certified appliance recycling centre or processing centre.
Recycling Passport with specifications of components and materials used in this processor is available on www.glunz-jensen.com/support.

Packaging

Plastic packaging materials are marked according to ISO 11469.

Noise emission

Acoustical noise according to ISO 11201:1996
Sound pressure level

Operational mode:	< 62 dB
Stand-by mode:	< 51.1 dB

Chemical emissions

Ozone: $0\ mg/m^3$
Dust: $0\ mg/m^3$
Styrene: $0\ mg/m^3$

Heat emissions

See "Power consumption" on page1-5.

Mechanical specifications

Performance

Plate types	single sided thermal offset plates
Plate width min.- max.	240 - 1250 mm (9.5 - 49.2")
Plate length min.	325 mm (12.8 ")
Plate thickness min.- max.	0.20 - 0.40 mm (0.008 - 0.016")
Plate speed	50 - 240 cm/min (19.7 - 94.5 "/min)
Brush speed	40 - 125 rpm

Tank capacities

Developer, total ex. pumps etc.	64.0 l (16.9 US gal.)
Wash (optional with integrated water circulation) ex. pumps etc.	19.5 l (5.15 US gal.)
Gum	N/A

Temperatures

Developer min. - max.	18 - 35 °C (64 - 95 °F)
Dryer, process default	50 °C (122 °F) non-adjustable

Water requirements

Pressure	> 1 bar (15 psi)

Water consumption

Operation (tap water in wash)	16 l/min (4.2 US gal/min)
Stand-by (tap water in wash)	0.0 l/min (0.0 US gal/min)

Hose connections

Water supply	12 mm (¾")
Drain, developer	20 mm (0.79")
Drain, wash	20 mm (0.79")

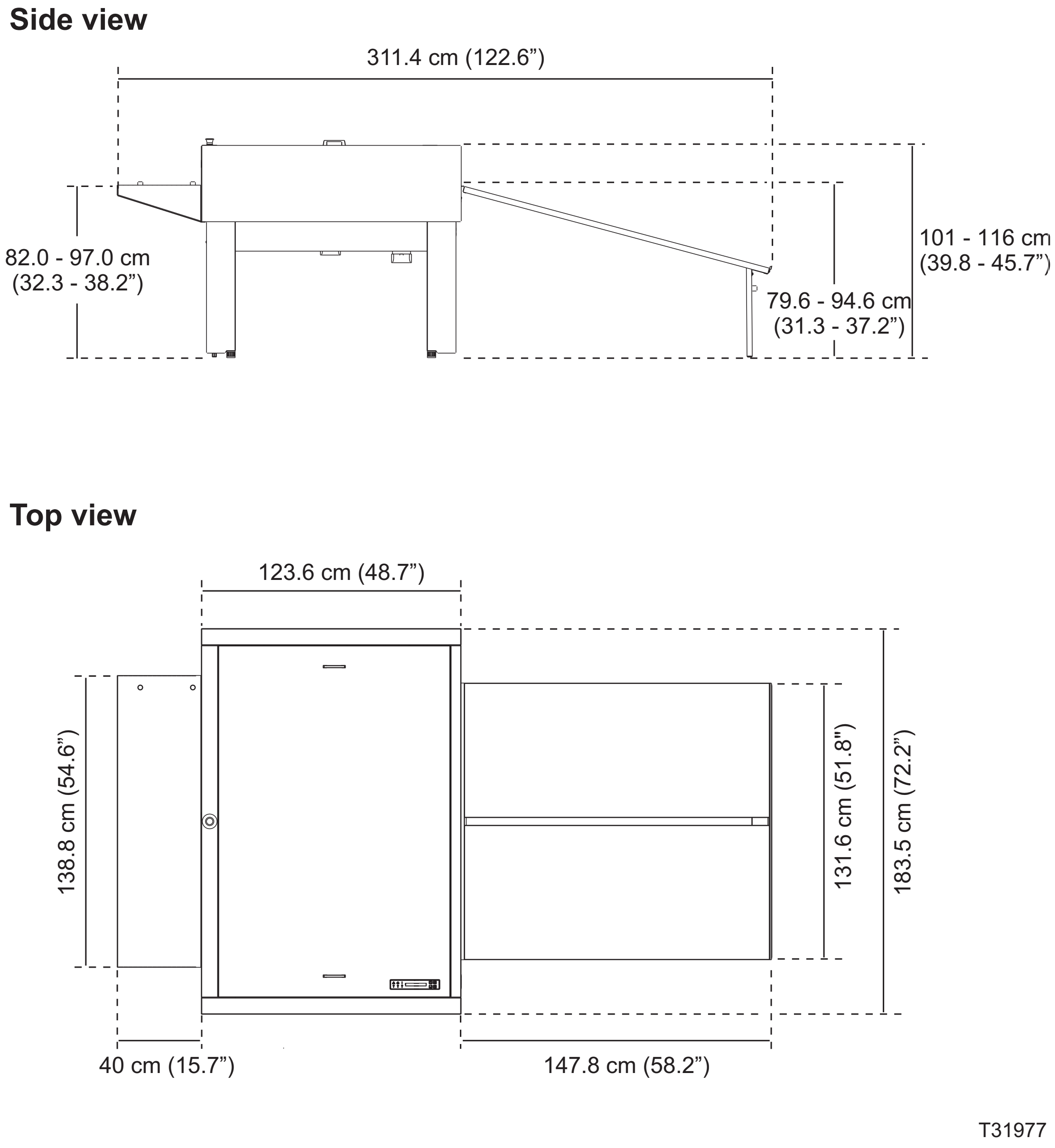
Weights

Weight, crated	410 kg (903.9 lb)
Weight, processor	340 kg (749.6 lb)

Exit table

Capacity	max. 30 plates NOTE! Consider risk of scratches

Dimensions


Side view
311.4 cm (122.6”)
82.0 - 97.0 cm
(32.3 - 38.2”)
101 - 116 cm
(39.8 - 45.7”)
79.6 - 94.6 cm
(31.3 - 37.2”)
Top view
123.6 cm (48.7”)
138.8 cm (54.6”)
131.6 cm (51.8")
183.5 cm (72.2”)
40 cm (15.7”)
147.8 cm (58.2”)
T31977

Electrical specifications

Power supply

The requirements below are specifications for preparing the installation protection. It is important to prepare the fuses/circuit breakers with adequate capacity as specified here.

Specifications on the processor's name plate is the actual input current and will thus not be identical to below mentioned.

	Supply/fuse	Recom. cable type
EUR	Single Phase, 1W + N + PE 230V / 1 x 16 Amps, 50-60 Hz	Min. 3 x 1.5 m^2 type H03VV-F
US	Single Phase, 2W + PE 230V / 2 x 20 Amps, 50-60 Hz	Min. 3 x 14 AWG type SJ or SJO
JAP	Single Phase, 2W + PE 200V / 2 x 15 Amps, 50-60 Hz	Min. 3 x 14 AWG type SJ or SJO
All	Voltage tolerance ±10%	

Fuses

The fuses must have a breaking capacity of min. 100kA.
If using automatic circuit breakers make sure that they are Type D.

Power consumption

	Power consumption at ...
EUR/ US	230 VAC operation: approx. 1.75 kWh (6,000 BTU/hour)
	Stand-by: approx. 0.06 kWh (200 BTU/hour)
	Power, maximum: 2.9 kWh (10,000 BTU/hour)

Noise level

See “General environmental information” on page 1-1.

Part 2: Installation

Installation hours

How many working hours are planned for the installation?

Installation hours for off-line machine:

- Provided the machine is unpacked and will stay in the room and all electrical, water and drain installations are in place, the estimated installation time is 4 – 5 hours .
- If the machine must be disassembled to get into the room before installation add another 4 - 5 hours for disassembling and reassembling.
- Unpacking and transportation from pallet to the floor, add 2 – 3 hours.

Standard installation hours for on-line machine:

- Provided the machine is unpacked and will stay in the room and all electrical, water and drain installations are in place, the estimated installation time, including interface installation and connection to the setter, is 6 – 8 hours.
- If the machine must be disassembled to get into the room before installation add another 4 - 5 hours for disassembling and reassembling.
- Unpacking and transportation from pallet to the floor, add 2 – 3 hours.

Customer training hours

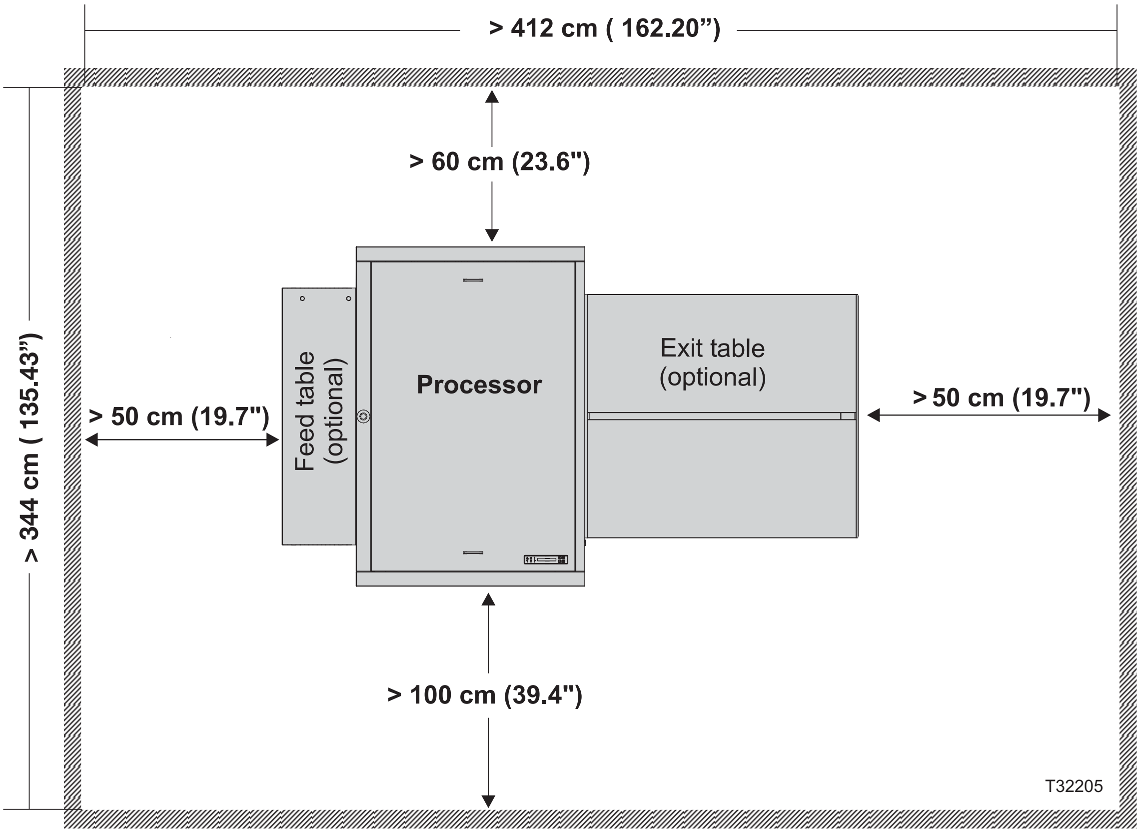
How many working hours are planned for training the customer?

- Introduction and training of the customer (daily user) in normal use of the processor, operating, etc., is estimated to 2 – 3 hours.
- Training of the customer (daily user) in normal daily cleaning and maintenance is estimated to 2 – 3 hours.

Preparing the installation site

Space requirements

Make sure that the free space around the machine at the installation site makes servicing possible.
The recommended minimum free space around the machine is specified in the illustration below.



CTP online

For the CTP On-line processors the space requirements at the processor front has to be decided separately.

Power outlet

If not already there, a main power outlet should be installed in the room where the machine will be installed. Max. distance to the machine 2 m (6 ft.).

See power outlet and fusing requirements earlier in this manual.

Cleaning facilities

It is essential to have easy access to a sink and a water tap with hot water where rollers, guides, and brushes can be washed.

The minimum recommended size of the sink is:

Minimum recommended size of the sink
150 x 40 cm (59.6 x 15.7")

Drain connections

Never lead drain hoses from the developer section to a drain, as most developers are strong pollutants and it is strictly forbidden to empty this type of chemistry into the public sewer system.

When establishing central reception systems for waste chemicals, copper or brass should not be used in the draining system as the chemicals involved are highly corrosive.
Therefore plastic or rubber is recommended.
Check with the chemicals supplier for details.

Environmental requirements

Provide a heating and ventilating system capable of maintaining room temperature between 15 and 25°C (59 and 77°F) and relative humidity on max. 80%.

Capacity of the air condition/ventilation system must be adequate for heat emission (see "Power consumption" on page 1-5).

Unpacking/preparing the processor

General

Carefully unpack the machine and check that all parts are present according to the enclosed packing list and in good condition.

Installation kit

Installation and spare parts kits are included with the processor. They comprise the different parts necessary to make the installation and some key components as spare parts.

See enclosed packing list for further information.

Transport through narrow doorways

Dependent on the width of the door(s) through which the processor has to be transported to the installation site, the Service Technician may have to perform the actions described in the table below:

If width of the doorways are …

If width of the door is…	Then…
> 159 cm (62.6")	No action is required as the crated processor can be transported immediately to the installation site.
125 - 159 cm (49.2 - 62.6")	The Service Technician has to unpack the processor.
< 125 cm (49.2")	The Service Technician has to unpack and strip down the processor.

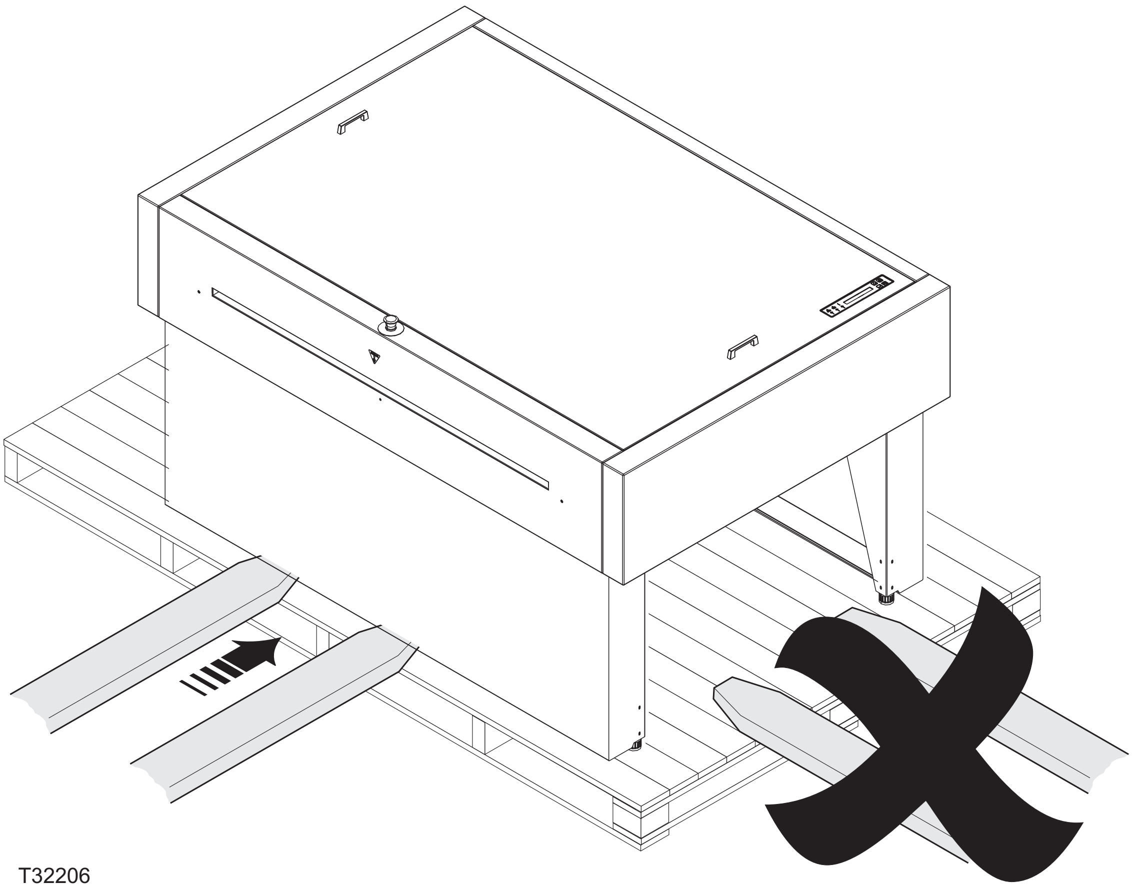
Transport security items

During transportation many of the parts outside and inside the processor have been secured using tape, plastic, strips, and various pieces of sponge rubber. Make sure to remove all items.

Lifting the processor off the pallet

Enter the fork lift under the processor from either the **input** or **exit** end of the processor. Lift the processor off the pallet and place it on the floor.

Severe damage will be caused if the fork lift is entered underneath the left or right side of the processor.



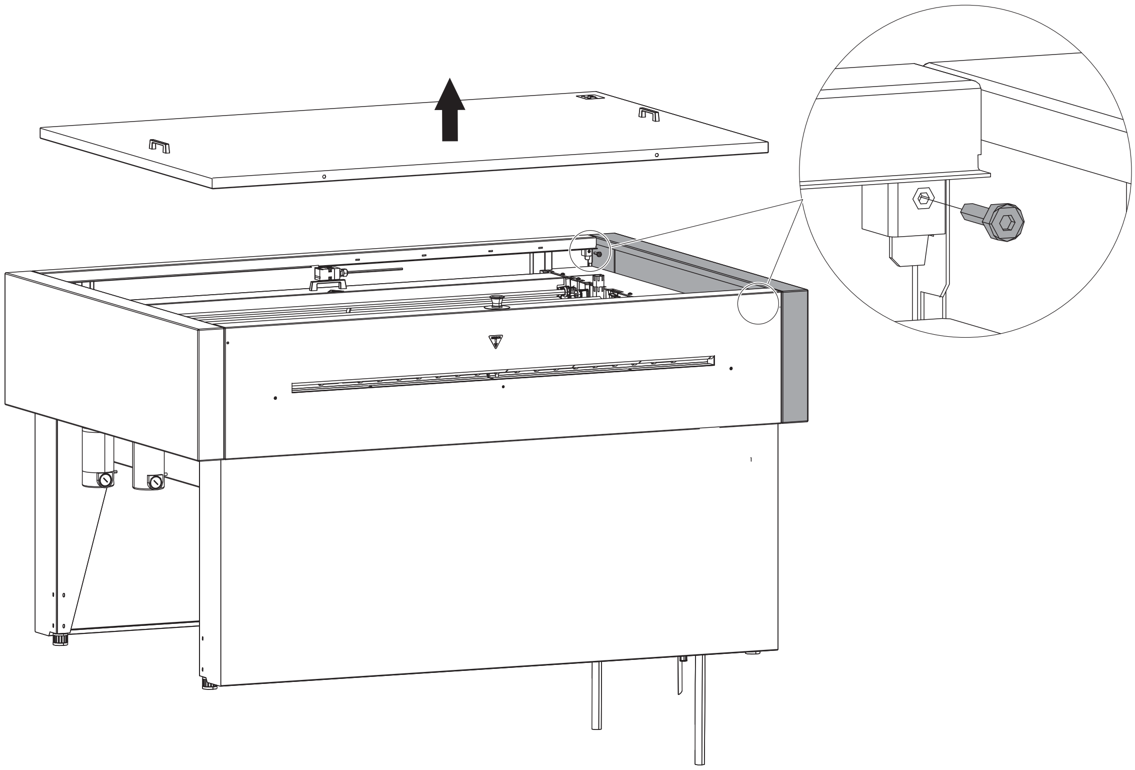
T32206

Removing the fenders

In order to make the electrical installation it will be necessary to remove the fenders from the processor.

See illustration below.

- Lift and remove the top cover.
- Loosen the screw, lift and pull the side fender to remove it.



T32000

Electrical installation

General

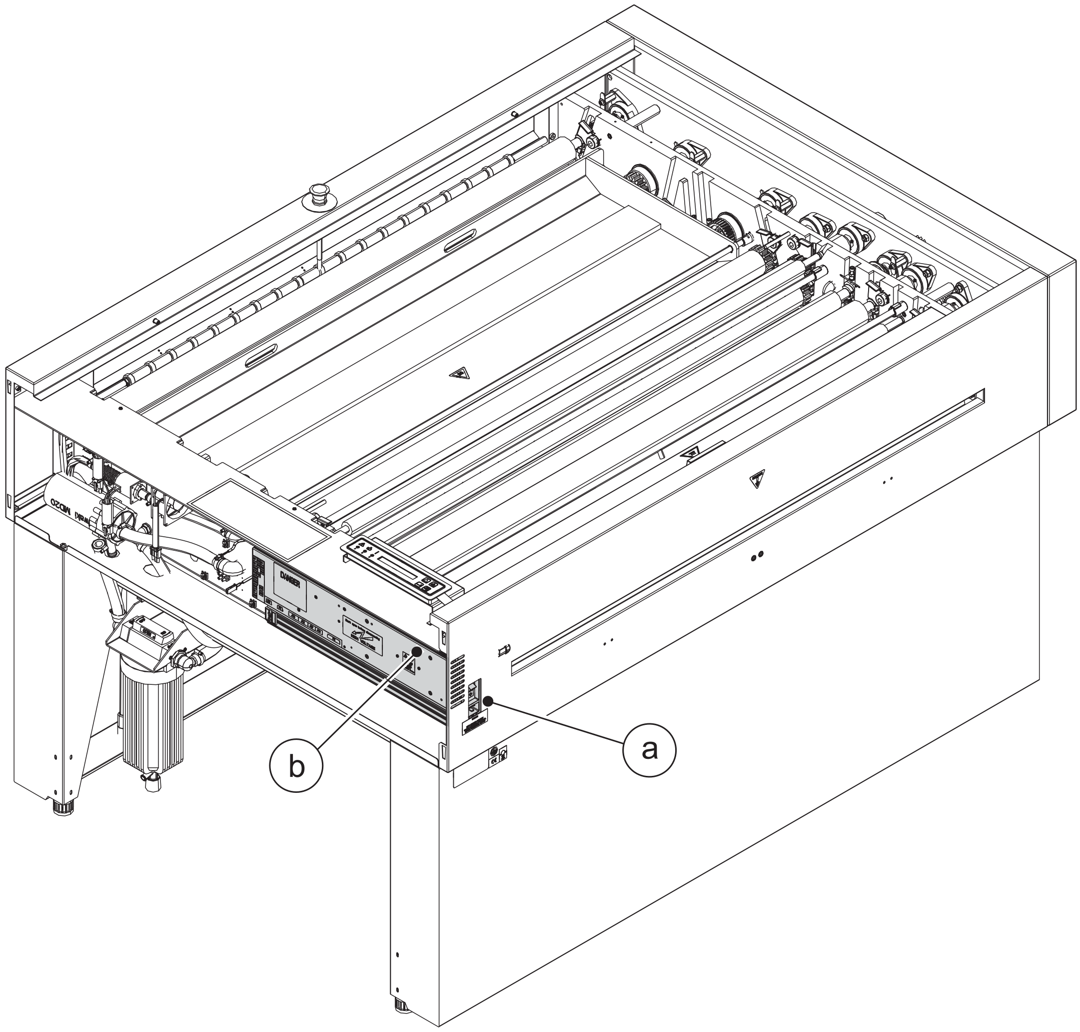
Electrical installation must conform to local regulations and guidelines.

The processor is Class 1 equipment. Therefore, the processor must be connected to earth to avoid electrical shocks.

Main power connections

The main power connection must be made to the main connector **(a)** in the electronics cabinet **(b)** by the delivered cable.

- Check the processor connections (see pages 1-5) for the current wiring type.



T32207

Stacker connection

See the Stacker Manual.

Processor/setter connections (ctp online processors)

See the Interface Manual.

Mechanical installation of the setter can be done now. Software settings and test need to be done after the completion of the processor installation.

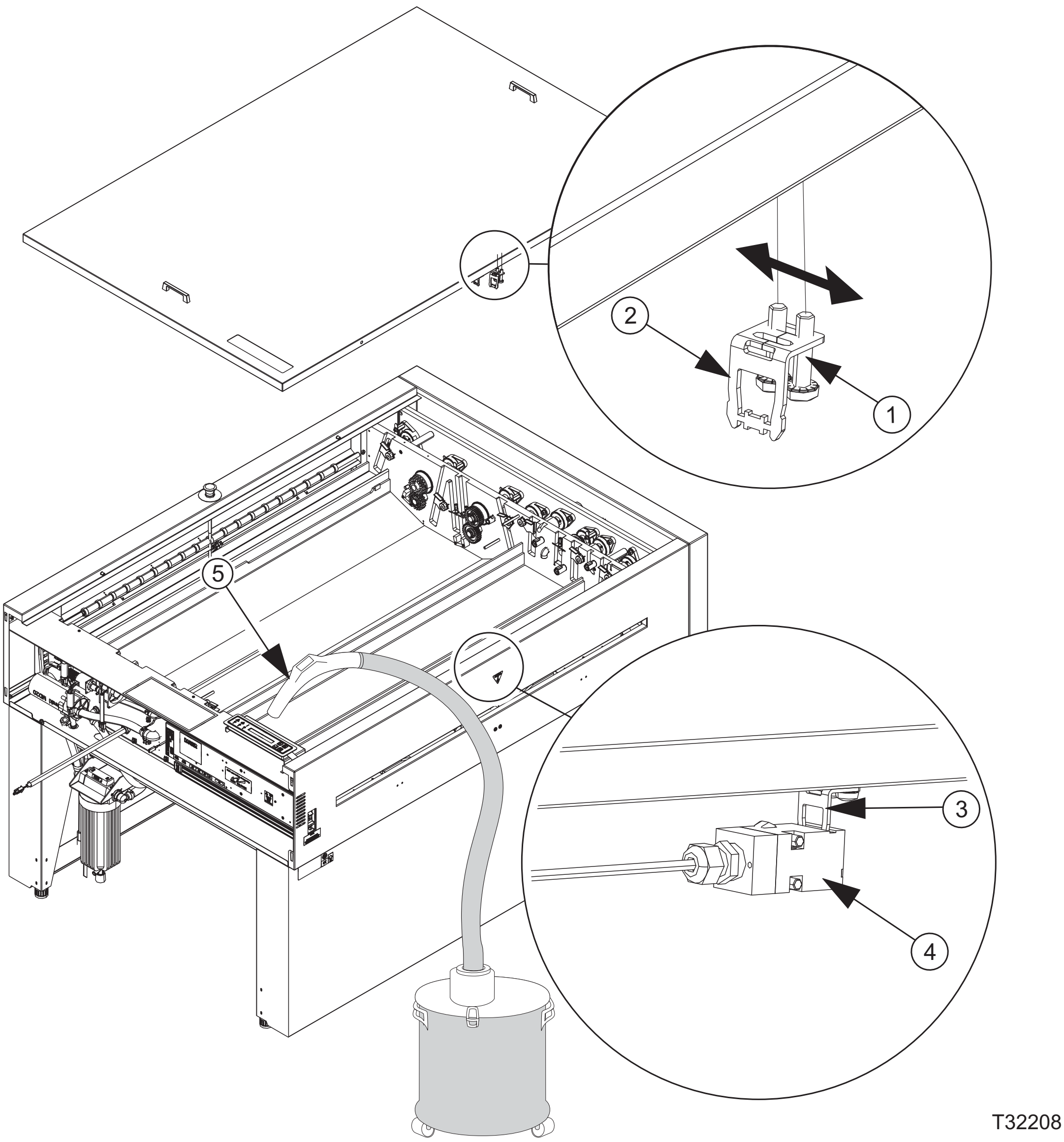
Mechanical installation

Adjustment of lid switch

See illustration below.
Adjustment of the lid switch may be needed after leveling of the processor.
Loosen the screws **(1)** and adjust the actuator **(2)** sidewards until it fits smoothly **(3)** into the switch **(4)**.

Cleaning the processor tanks

Remove all rollers and vacuum clean the tank **(5)** to remove sponge rubber remains and dust etc.



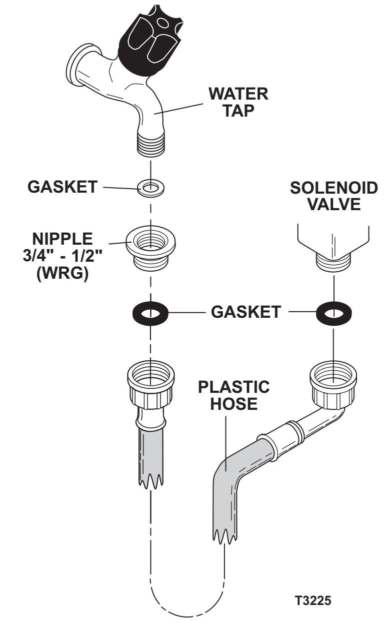
Water connection

The water supply connection is made by means of the plastic hose and the fitting (WRG) delivered with the processor.

As shown in the figure the hose must be connected between the water tap and the water inlet solenoid valve located at the rear base panel, underneath the processor.

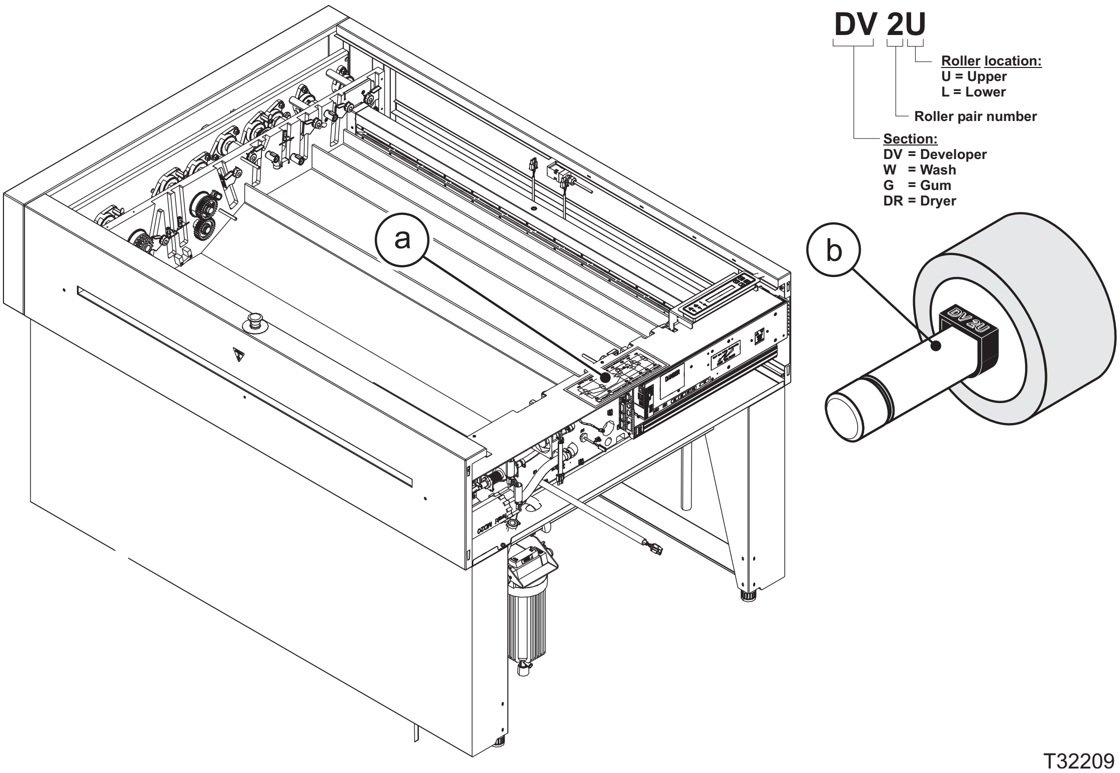
The hose can be connected to a water tap with ½" or ¾" male thread (WRG). When connecting to ¾", the reduction nipple shall not be used.

When water connection has been made open the water tap and check that all connections for water inlet are tight.



Mounting of rollers

On the top of the upper safety cover is placed a label **(a)** showing the roller configuration.
Each roller is marked with a small number **(b)**. Install the rollers by referring to the roller numbers shown on the label on the top of the upper safety cover.



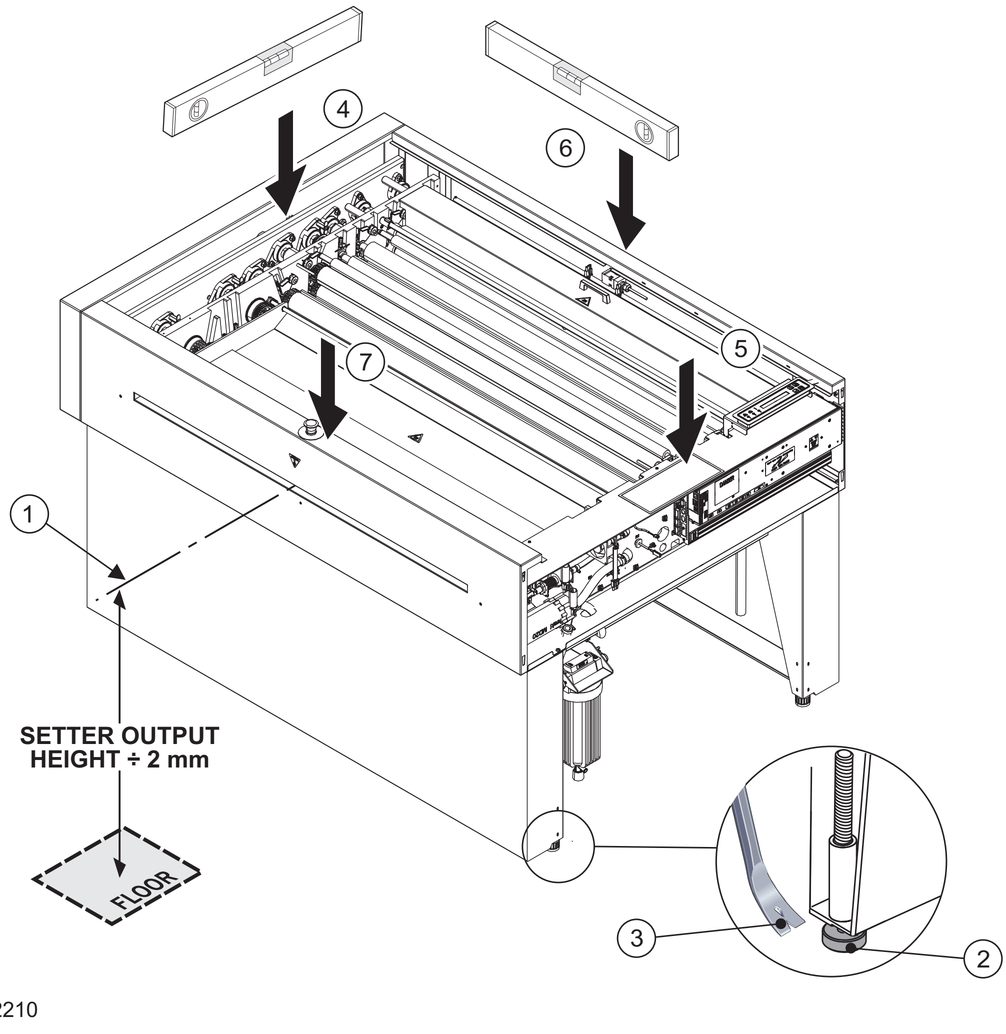
Levelling

The machine must be placed on a steady surface, so that it does not shake easily and the chemicals cannot be spilled from one section to the other.

Do not rely on the floor being absolutely in level.

For CTP ONLINE PROCESSORS the final height from floor to bottom of the processor entrance (1) must be: SETTER OUTPUT HEIGHT ÷2 mm.

- Use the adjustable feet **(2)** in the legs to level out the processor.
  It will be necessary to use ex. a crowbar **(3)** to lift the legs slightly before being able to turn the feet.
- Level out the processor lengthwise by placing a spirit level on the left **(4)** and right **(5)** tank side.
- Level out the processor crosswise by placing the spirit level on the front **(6)** and on the back of the processor **(7)**.
- Check levelling in all 4 positions and make final leveling if required.

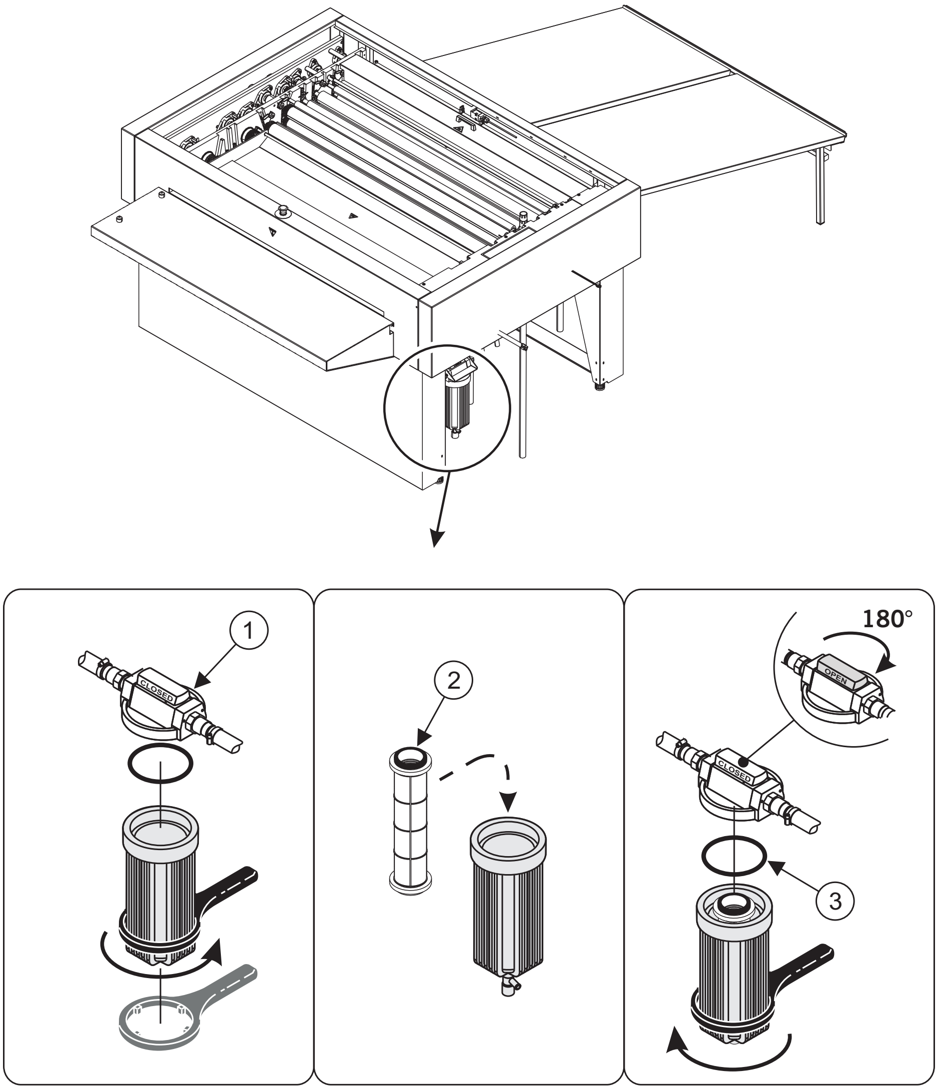


T32210

Installing the developer filter element

The developer filter element must be installed in the filter vessel at the leftt tank side.

- Unscrew the filter cover **(1)** (counterclockwise) and lift it off.
- Mount the filter element **(2)** underneath the cover and lower it into the vessel.
- Make sure that the O-ring **(3)** is fitted properly in the filter vessel groove then tighten the cover **(1)** (clockwise).
- Remember to open the filter after installing the filter element.



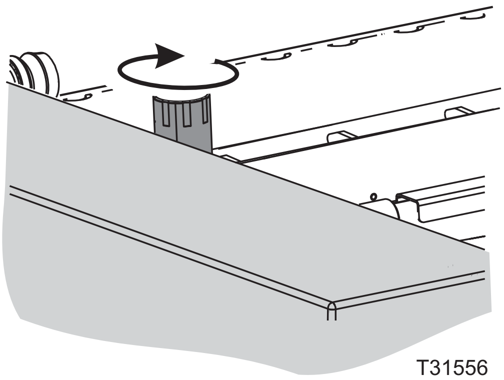
T32009

Filling up developer and wash

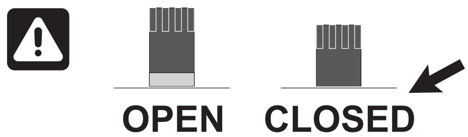
Developer

Make sure that the developer drain stand pipe is closed (see illustration).

Fill up the developer section manually as shown in the illustration below.



T31556

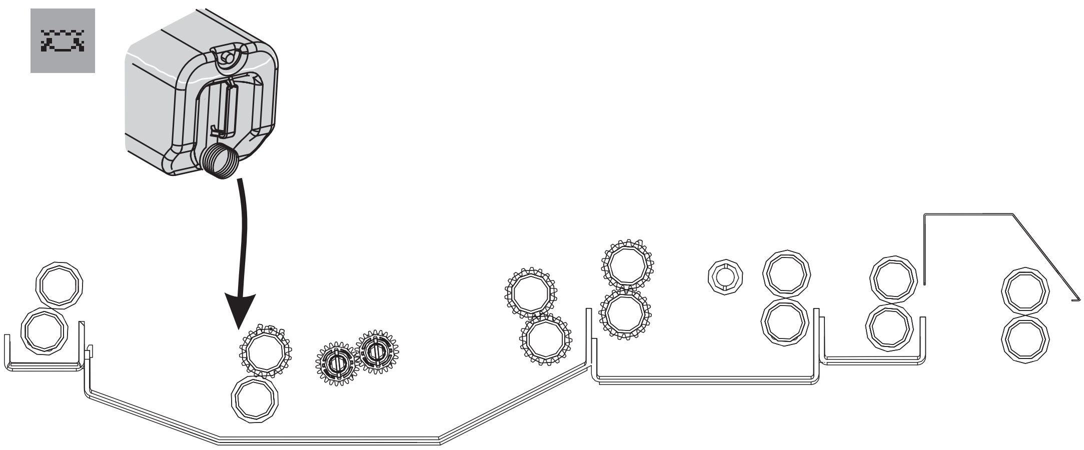


Wash

Wash water recirculation system.
If the processor is equipped with a wash water recirculation system the wash section will fill up automatically when the processor is switched into stand-by mode.

Remember to calibrate the solenoid valve. See description on page 4-20.

No wash water recirculation.
The water solenoid valve will let in water when a plate is entered through the input slot.

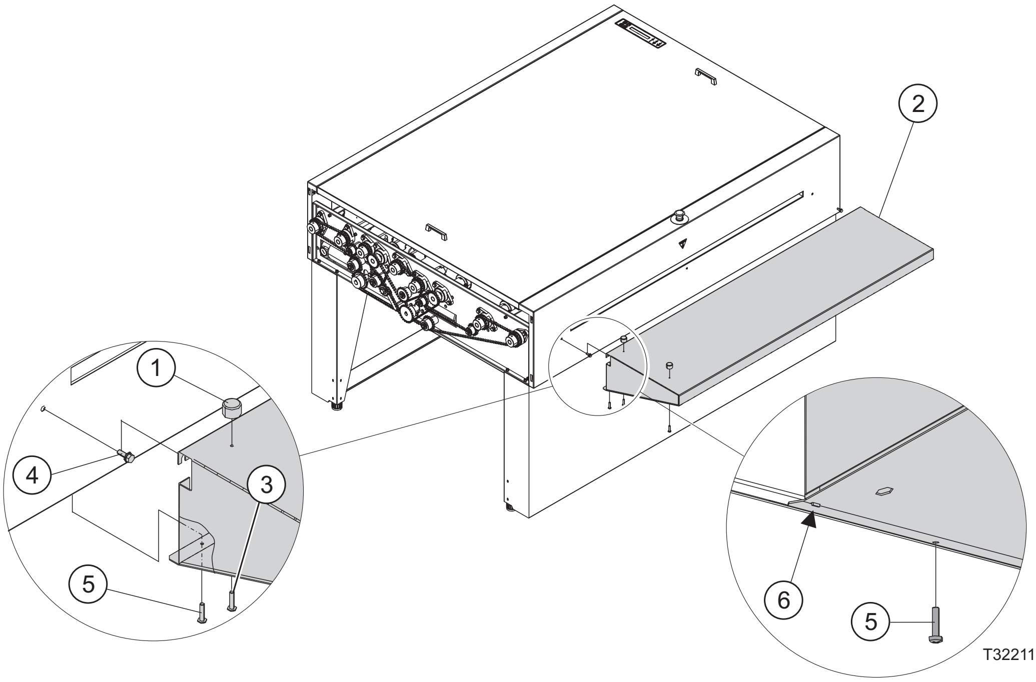


T31981

Mounting the feed table

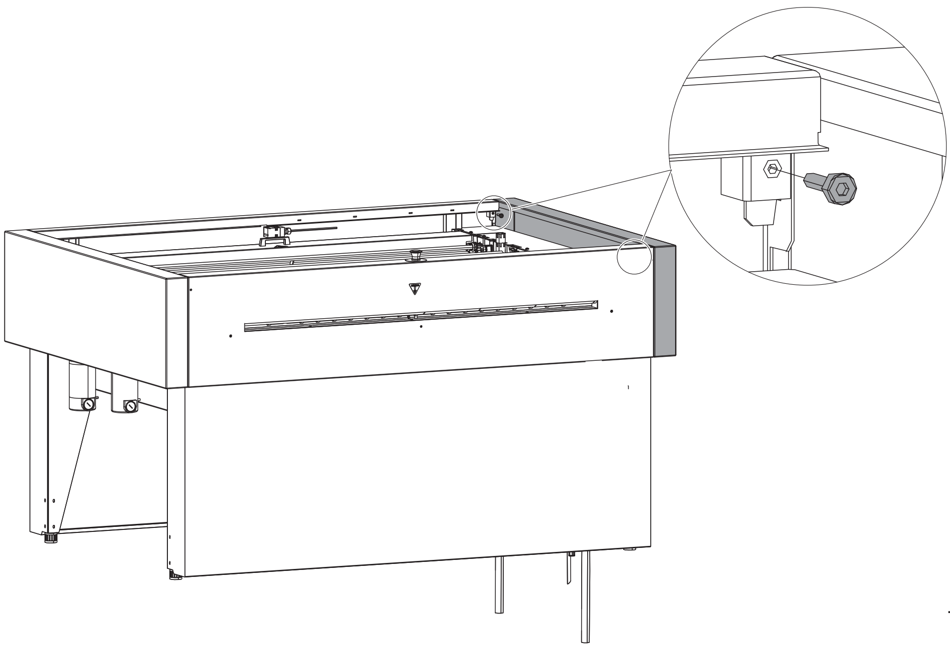
Offline processors only!

- Mount the guide pins **(1)** on the feed table **(2)** by using the screws **(3)**.
- Mount the screws **(4)** into the front panel. Do not tighten the screws.
- Attach the feed table **(2)** on the screws **(4)** and then tighten the screws.
- Secure the feed table from the bottom by using the two screws **(5)**. Make sure the lock fits into the counterpart **(6)**.



Mounting the fenders

- Mount the left and right fenders with the screws as shown below.



Mounting the delivery table

- On the front end of the delivery table is a supporting bar. Mount the delivery table by attaching the supporting bar inside the exit slot of the plate processor.

Hose Connections

The illustration at the next page shows the hose configuration. Make the following hose connections underneath the tank:

All drain hoses must have a positive fall from the processor to the waste containers and drain.

Never lead drain hoses from the developer section to a drain, as most developers are strong pollutants. It is also illegal to empty these types of chemicals into the public sewer system.

Particularly when preparing the drain connection, ensure that copper or brass is not used in the draining system since the chemicals involved might corrode it. Plastic or rubber is therefore recommended. Check with your chemicals supplier for details.

Be careful that the drain hoses do not sag or form water traps.

Gum (10) (Blue)

Connect to gum container.

The gum hose (10) should be cut off to the shortest possible length to avoid any sagging and formation of water traps and/or air pockets.

Repl. (1) (Red)

Connect to developer replenishment container.

Dev. waste

Connect to waste container.

Dev. drain

Connect to waste container.

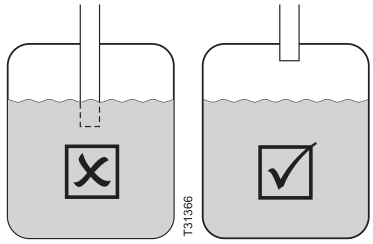
Wash drain

Connect to waste container.

Gum return hose

Connect to gum container.

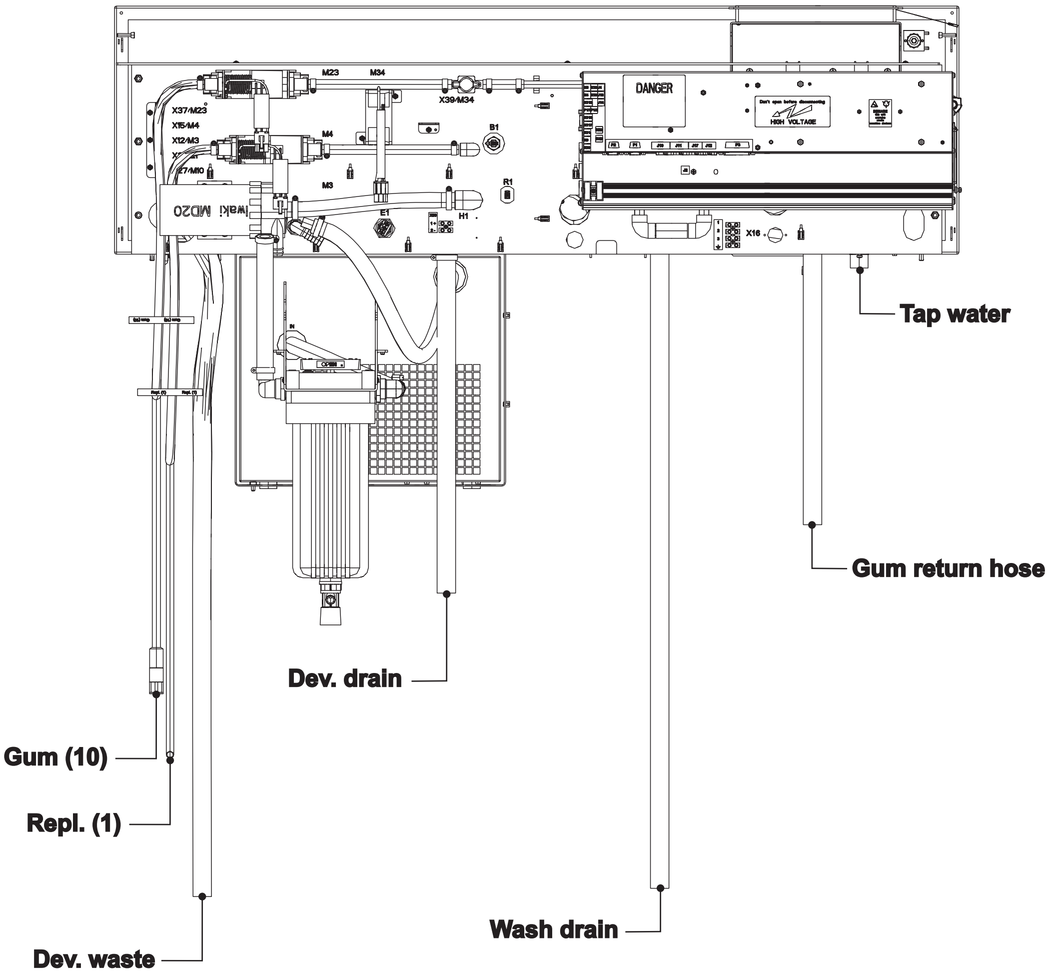
When inserting the gum return hose into the gum container, make sure that the hose ends are never below the gum surface (see illustration below).



T31366

Tap water

Make connection from water tap to solenoid valve underneath the processor.



T32354

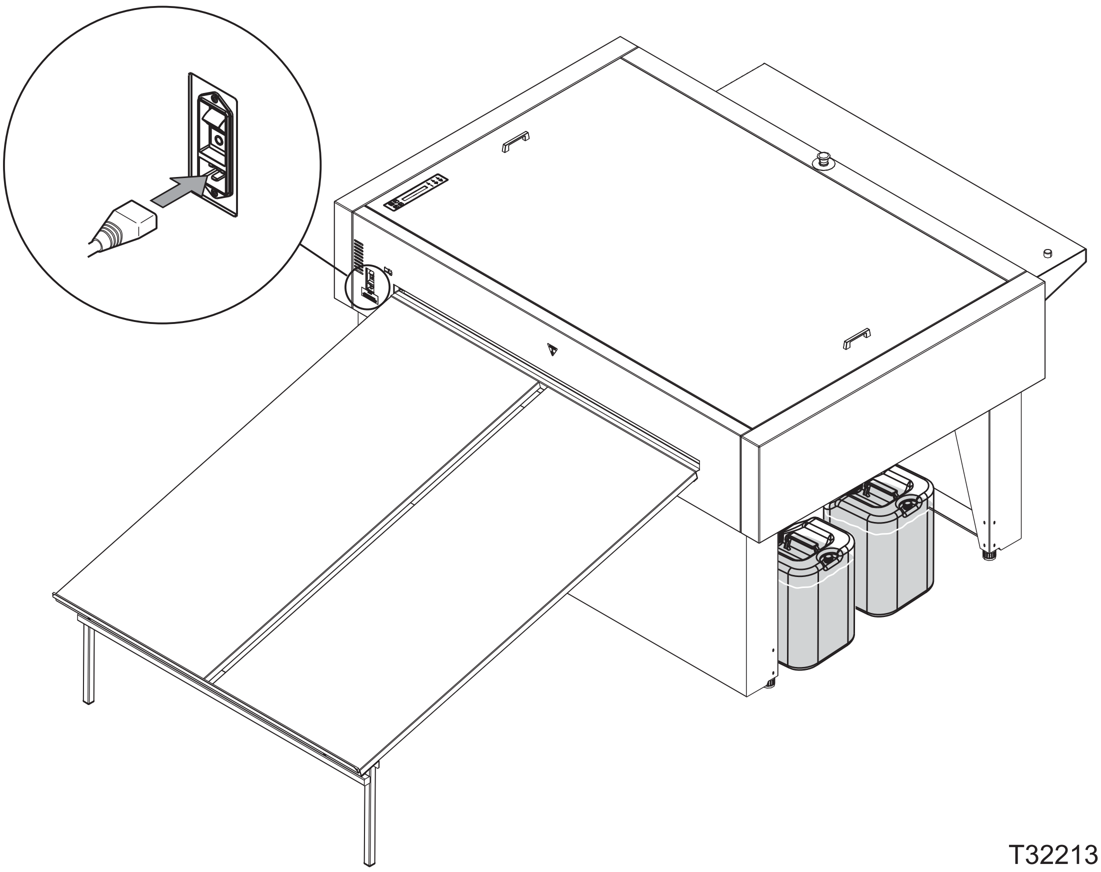
Power supply cable

The cable/plug required for main power connection is delivered with some models only. See the power supply table earlier in this manual. The table also shows recommended power supply cables for processors delivered without cable.

The conductors in the power supply cable must be of copper.

When deciding what type of cable to use take into account the chemical resistance (chemicals may leak onto cable) and the mechanical resistance (operator may step onto cable).

Provide for additional cable protection, e.g. cable covers, if cable is exposed to heavier transport such as fork-lift trucks etc.



T32213

Installation of setter interface

If the processor is part of an online system, now make the installation of the setter interface as described in the Interface Manual.

When installation of the setter interface is complete please return to this manual for finishing the entire installation.

Finishing installation

Software settings

The processor is configured from the factory. The default parameters are set as follows:

Parameter	Program 1	Program 2	Program 3	Program 4
Speed	110 cm/min.	110 cm/min.	110 cm/min.	110 cm/min.
Developer brush speed	120 rpm	120 rpm	120 rpm	120 rpm
Developer set temperature	24 °C	24 °C	24 °C	24 °C
Developer dwell time	29 sec.	29 sec.	29 sec.	29 sec.
Parallel plates	No	No	No	No

Change of settings is possible only via the Remote Enabling System. See page 3-10 for more information.

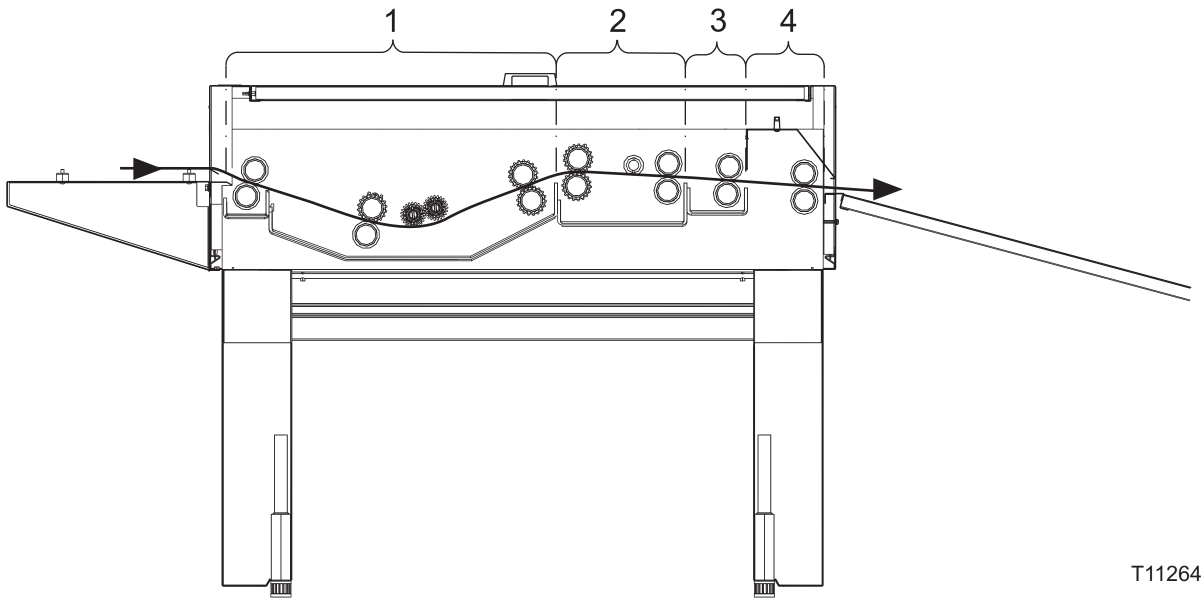
Safety check

A safety check must be performed after installation. See page 4-2.

Part 3: Functional description

General

The basis processor contains four major sections:



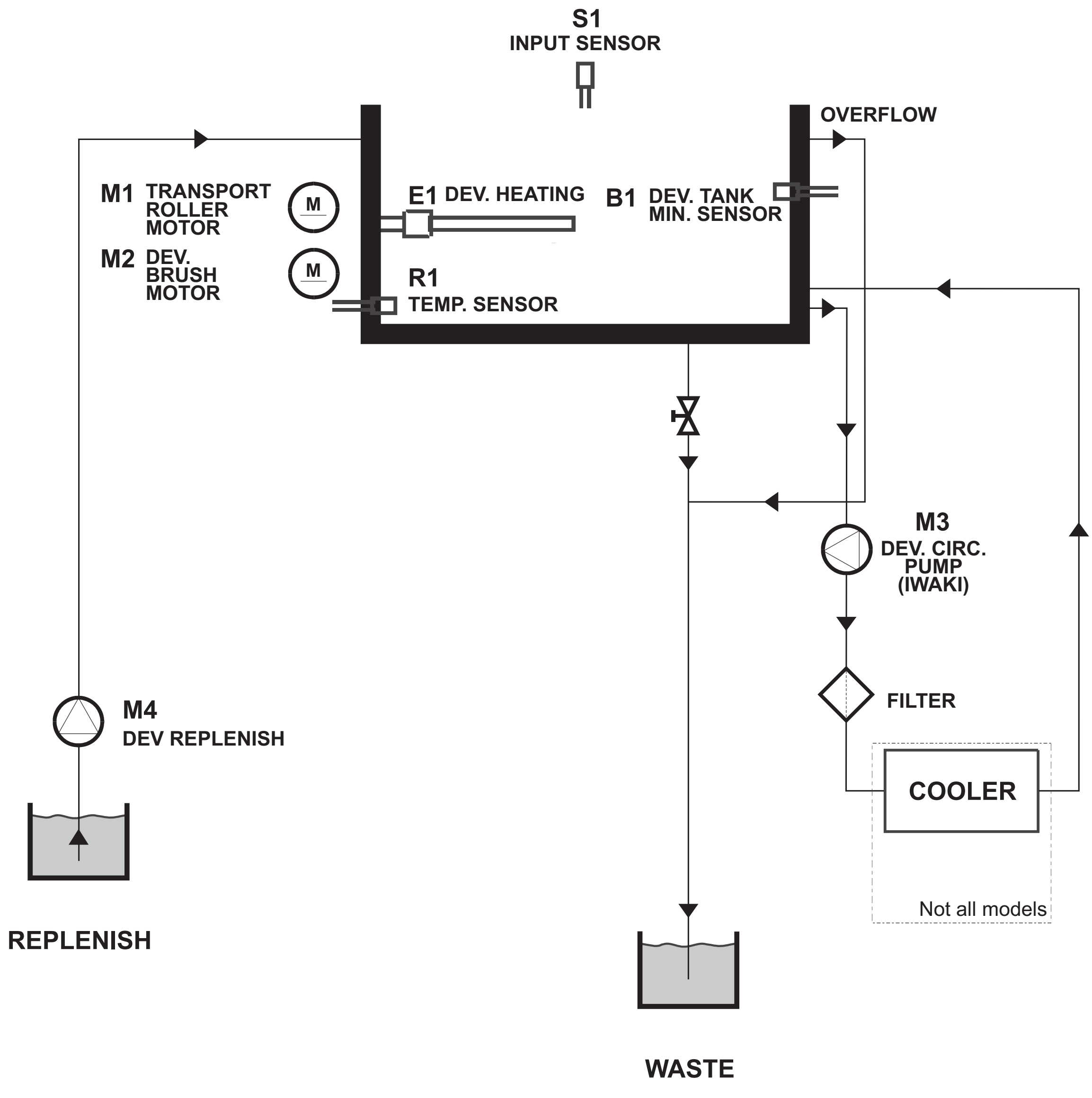
1	**Developer**	Developing of the plate and removing of the remaining unexposed emulsion.
2	**Wash**	Washing off the developer chemicals from the developed plate.
3	**Gum**	Application of a thin layer of gum onto the developed and washed plate to protect it from oxidation, dirt, fingerprints etc.
4	**Dryer**	Drying of the plate to ensure immediate handling of the plate.

The processor sections are described in detail on the following pages.

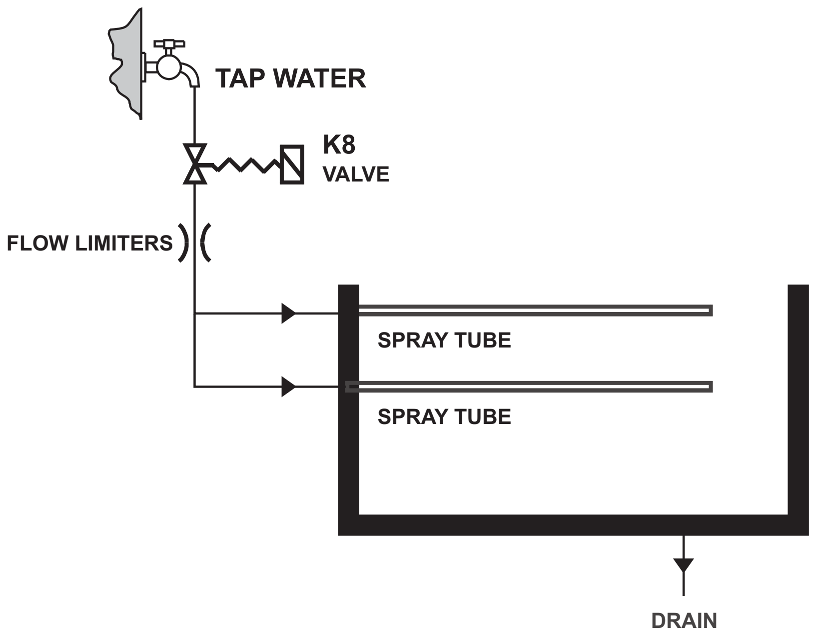
Controls and indicators

The controls and indicators are described later in this chapter.

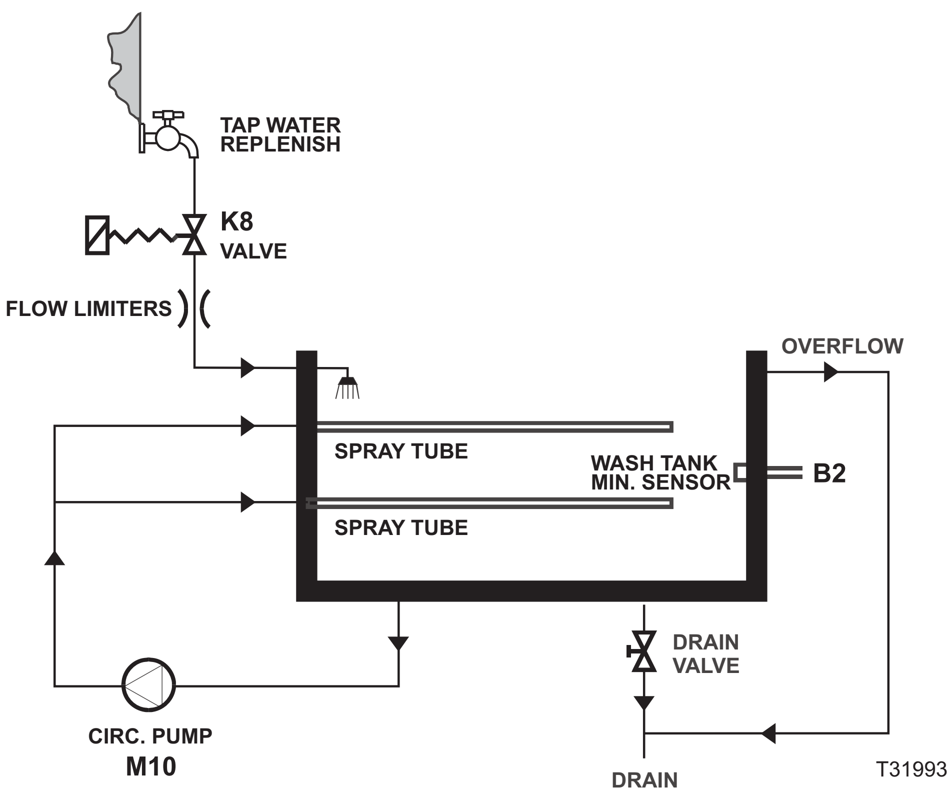
DEVELOPER


S1
INPUT SENSOR
OVERFLOW
M1 TRANSPORT ROLLER MOTOR
M
E1 DEV. HEATING
B1 DEV. TANK MIN. SENSOR
M2 DEV. BRUSH MOTOR
M
R1
TEMP. SENSOR
M3
DEV. CIRC. PUMP (IWAKI)
FILTER
COOLER
Not all models
M4
DEV REPLENISH
REPLENISH
WASTE
T31992

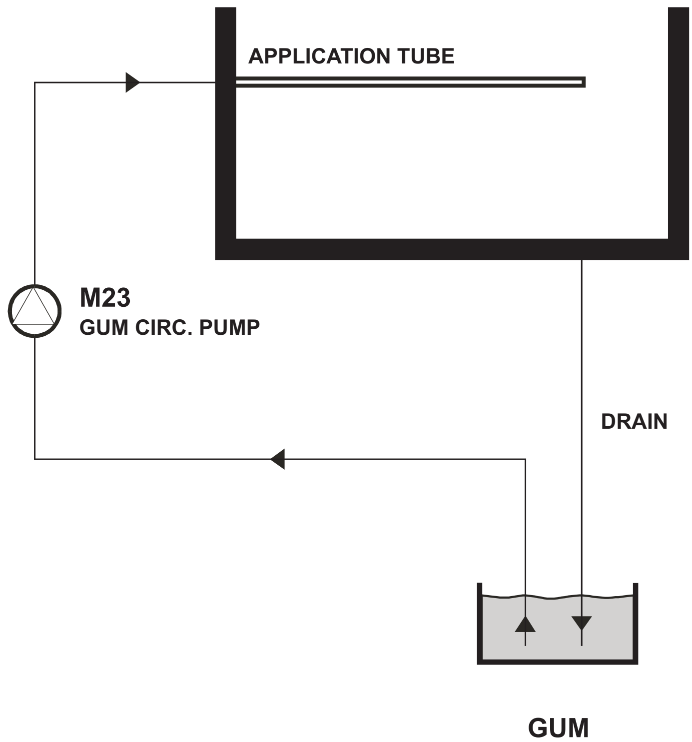
WASH, TAP WATER



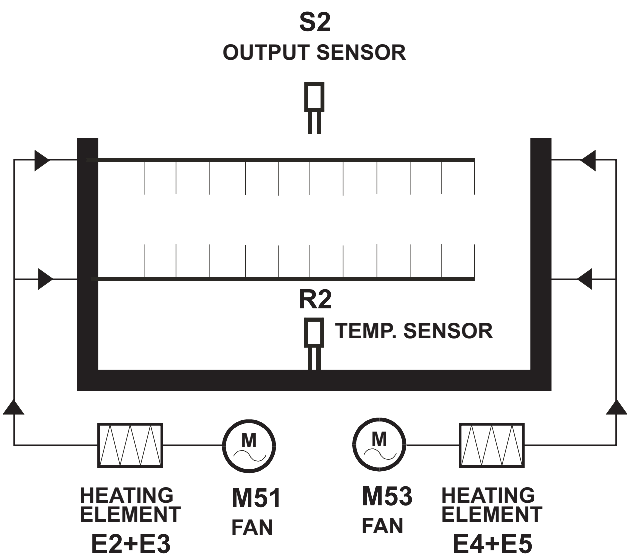
WASH, CIRCULATION WATER



GUM

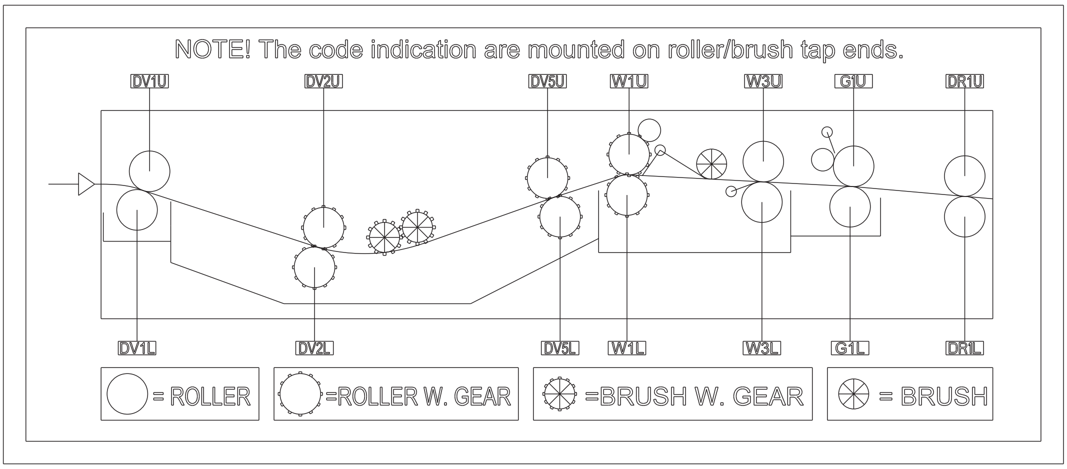


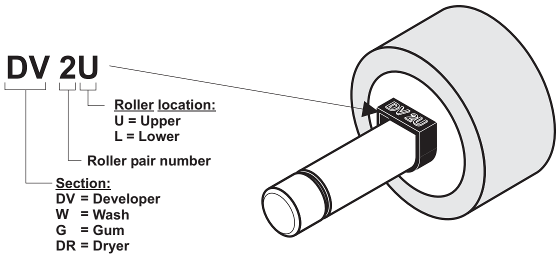
DRYER



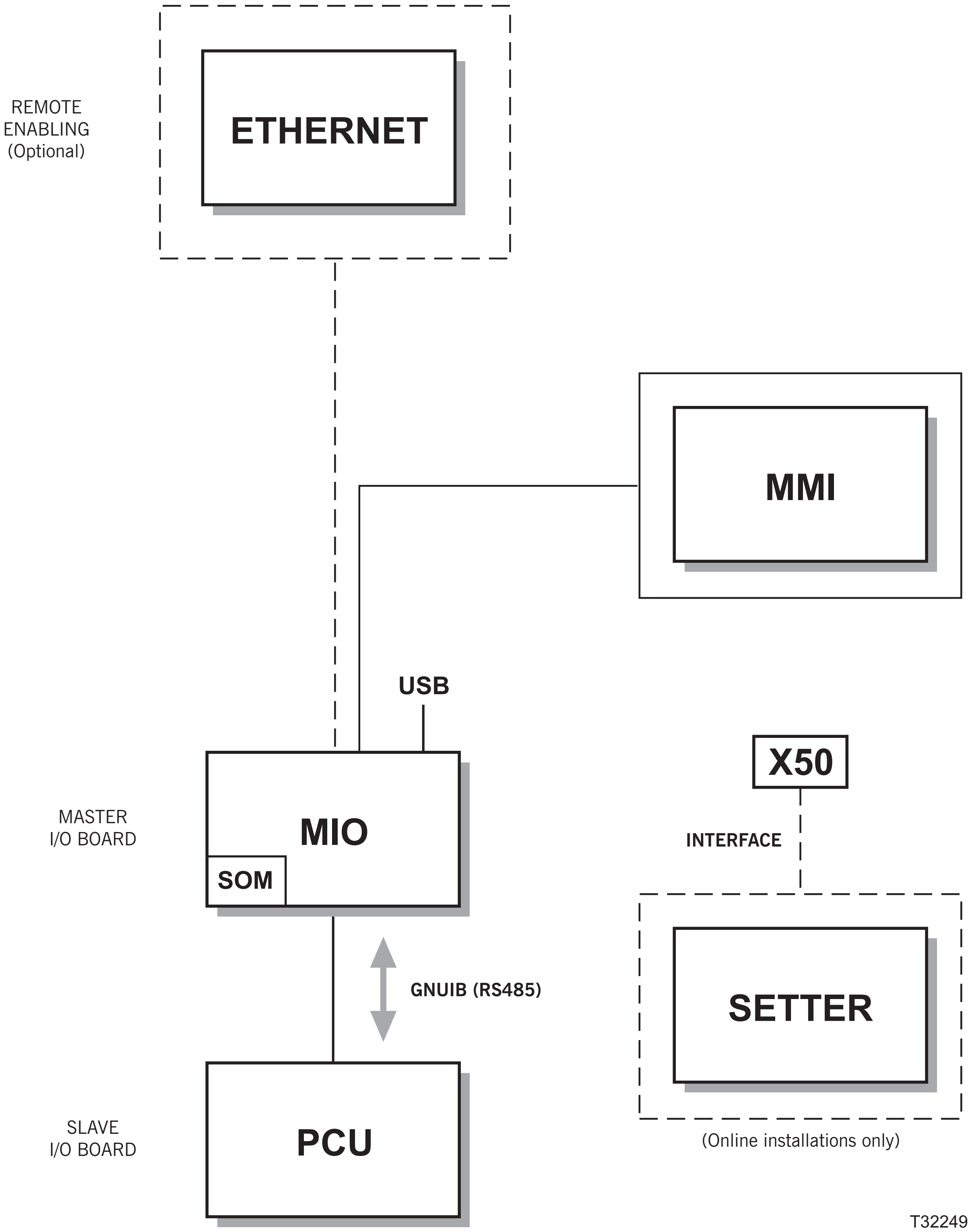
T31994

TRANSPORT





T31978


REMOTE
ENABLING
(Optional)
ETHERNET
MMI
USB
X50
MASTER
I/O BOARD
MIO
SOM
INTERFACE
GNUIB (RS485)
SETTER
SLAVE
I/O BOARD
PCU
(Online installations only)
T32249

Electronic control

See illustration opposite. The electrical control system consists of:

Master input/output unit (MIO)

The electrical control system is controlled by the MIO board via the SOM (System on Module).
There are two separate communication lines (buses):

- **GNUIB** for all internal communication in the processor (RS485).
- **ETHERNET** for Remote Enabling System.

Power control unit (PCU)

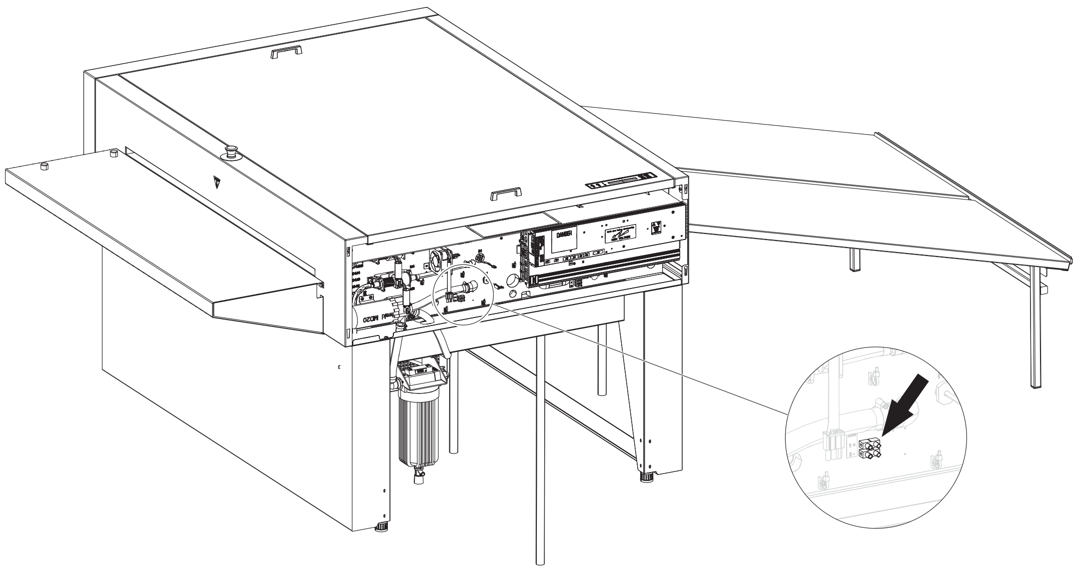
The PCU-board holds all the high voltage in- and outputs for the control of heaters, motors etc.

Control panel (MMI)

The user operates the processor from the control panel with one line display.

Setter connection

Connection of a setter interface is made to the terminal block X50 positioned outside the electronics box.



T32355

Controls and indicators

The processor is equipped with the function keys located on the right fender (see illustration below).

Function keys - standard function

(1) Eject plate/manual function

Starts the transport system to eject a plate jammed inside the processor.

(2) Manual replenisher

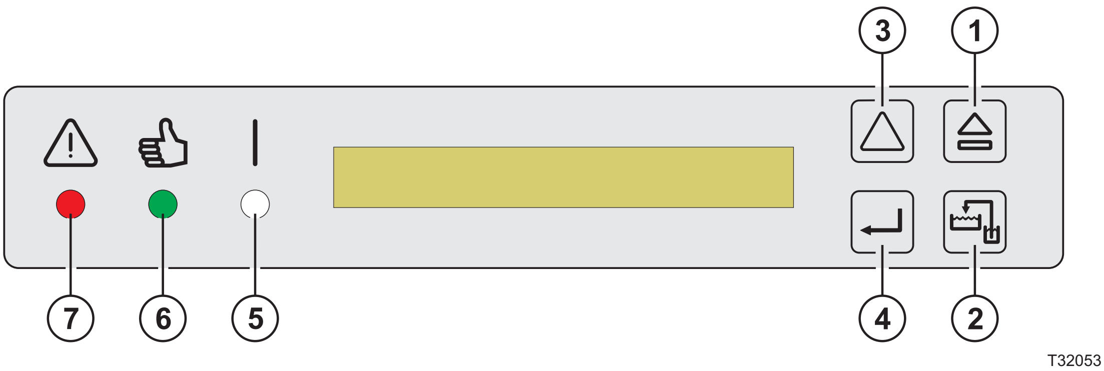
Gives a fixed amount of replenisher to the finisher section.

(3) Scroll up

Scrolls up in the menu of the control panel.

(4) Accept

Accepts the chosen function.



Function keys - service mode

To enter the service mode press scroll up button (3) until "Service/Info" appears and confirm it by pressing button (4) twice.
All service activity must be done via Remote Enabling System.

(2) Pump calibration

Calibrating of the pump is done via the Remote Enabling System. See page 4-18 for the procedure.

Indicators

The control panel holds 3 indicators:

(5) Power *(white)*, **(6) Ready** *(green)* and **(7) Alarm** *(red)*.

WHITE	GREEN	RED	CONDITION
OFF *> 1 minute*	***OFF***	***OFF***	*For software older than* ***xxx-20111201*** Power off or initializing. *For software newer than* ***xxx-20111201*** Power off or malfunction SoM/MIO. Check cable connection to LDM if system stays in this state. See "PCU analyzing LED signals" on page 5-5 and "MIO analyzing LED signals" on page 5-7 too.
TOGGLING	***OFF***	***OFF***	*For software newer than* ***xxx-20111201*** Power up sequence. Sequence lasts approximately 1 minute. White LED goes off/on approximately 5 times in an irregular pattern.
ON	***OFF***	***OFF***	Sleep mode. Display shows "z Z z Z z Z z Z". Error. See display for status.
ON	***FLASHING*** *5 sec loop*	***OFF***	Warming up. Display shows ":-|". Processing plates. Display shows ":-)".
ON	***ON***	***OFF***	Ready to process plates. Display shows ":-)".
ON	***OFF***	***ON***	Alarm requiring user intervention.

Jog function

The jog function will make the rollers and brushes turn for a while at intervals to prevent crystallization of chemicals on the rollers and brushes.
The initial jog (after power has been applied to the processor) runs for ½ minute.
After that the jog will run for ½ minute every 10 minutes.

Change of settings

Change of settings is possible only via the Remote Enabling System.

Connecting to Remote Enabling

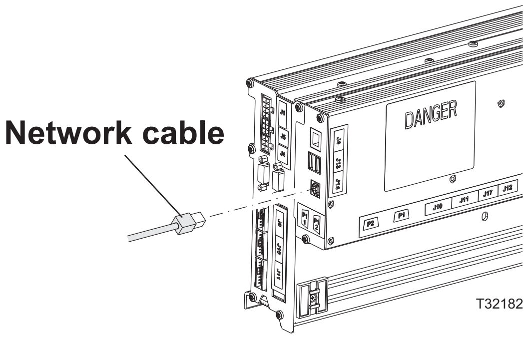
Making settings of this processor requires the Remote Enabling software and connection to a PC.

- If not already installed, please download the Remote Enabling System from www.glunz-jensen.com/support/download/software and install on a local PC. For this processor, select the Remote Enabling System for **GNUC 2**. Download and unzip the file to a separate folder on the PC's harddisk.
- To access the Remote Client, please activate the 'grclient.exe' stored in the folder 'GrClient Copy Install/GrClient'.

Tip! Copy a shortcut of the 'grclient.exe' to the PC's desktop for easy access to the Remote Client.

Electrical connection

- If a LAN (Local Area Network) cable is connected to the processor, or the PC is connected to wireless LAN, make sure to disconnect the cable/connection now.
- Connect the Ethernet cable delivered with the processor between the PC and the processor (see illustration).

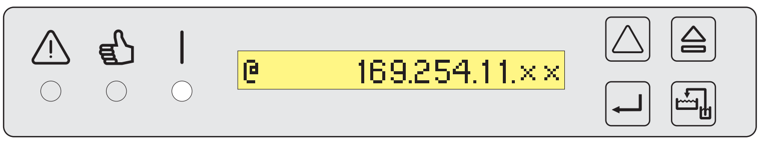


Setting up the service connection between the processor and the Remote Enabling System

- Enter the menu on the processor's control panel by pressing the △ button. See also the control panel Quick Intro guide.

If the display shows 'Service Code 2' the software configuration is missing, e.g. due to replaced SOM PCB. Back-up configuration file can be loaded with the Remote Enabling System. Please continue as described below.

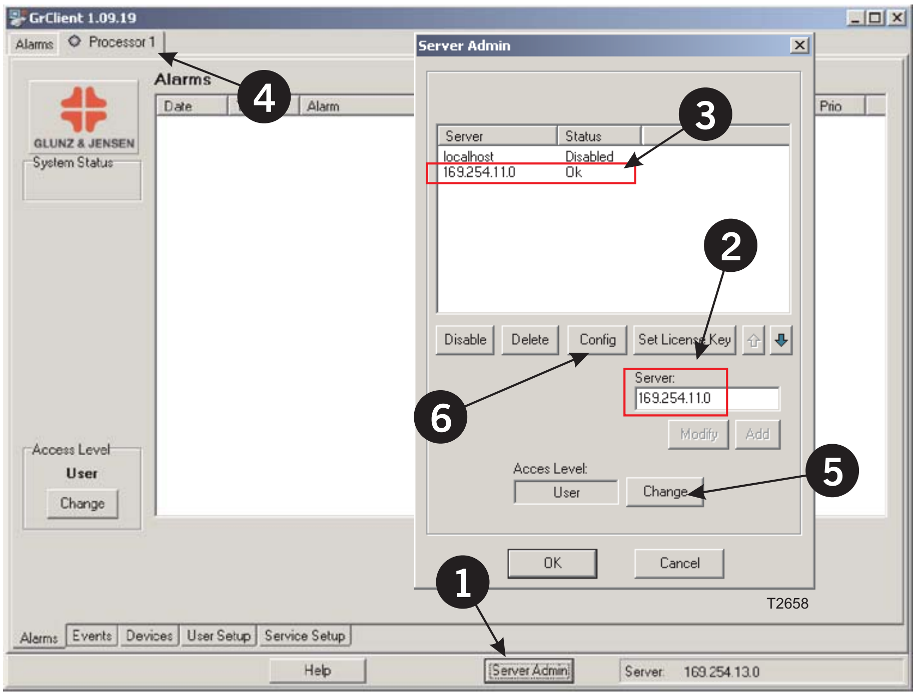
- Press △ to scroll to the Service/Info menu and press enter ↵ .
- Press △ to scroll to the LAN IP address (marked with @) 1) and press enter ↵ .
- You will now see a 'service' IP address **169.254.11.xx** 2) in the display.



1) A preset IP address which needs to be changed in case the processor will be connected permanently to the Remote Enabling System via an internal network. See the Remote Enabling Installation guide.

2) This is a 'service' IP address dedicated for service technicians to connect to the Remote Enabling System either for making settings and configuration of the equipment as described in the following, or for setting up the equipment to a permanent Remote Enabling installation (permanent LAN IP address) at the customer's site.

- Make a note of the 'service' IP address. It is needed for connecting to the Remote Enabling System.
- Start the Remote Client (shortcut icon on the desktop).
- In the Remote Client select ‘Server Admin’ (1). See illustration below.
- Enter IP address from the processor (169.254.11.x) in the 'Server' field (2) and click 'Add'. This will create the connection between the processor and the Remote Enabling System.
- Click OK.
- Check that connection to the processor is established: Re-open the ‘Server Admin’ and make sure that status field (3) for IP address 169.254.11.xx shows ‘OK’. When ‘OK’ the processor tab (4) will appear in the upper left corner of the Remote Client window.



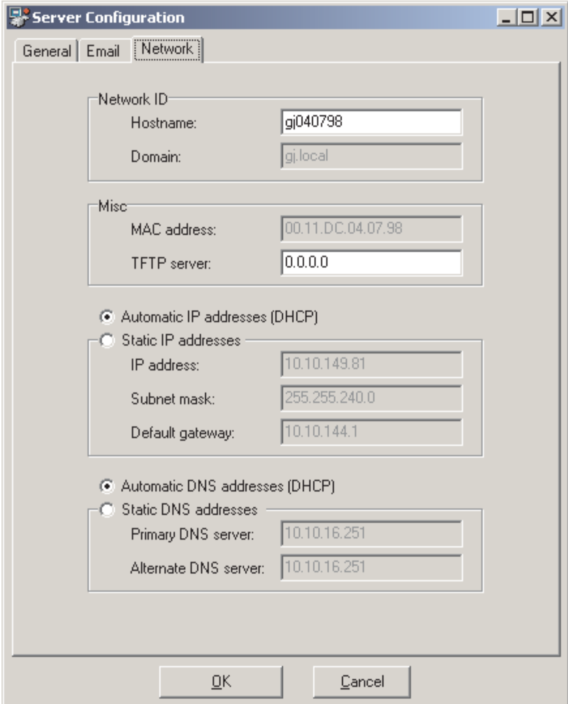
For more information about the Remote Enabling System please see the general installation manual enclosed with the Remote Enabling software.

Static IP address setting

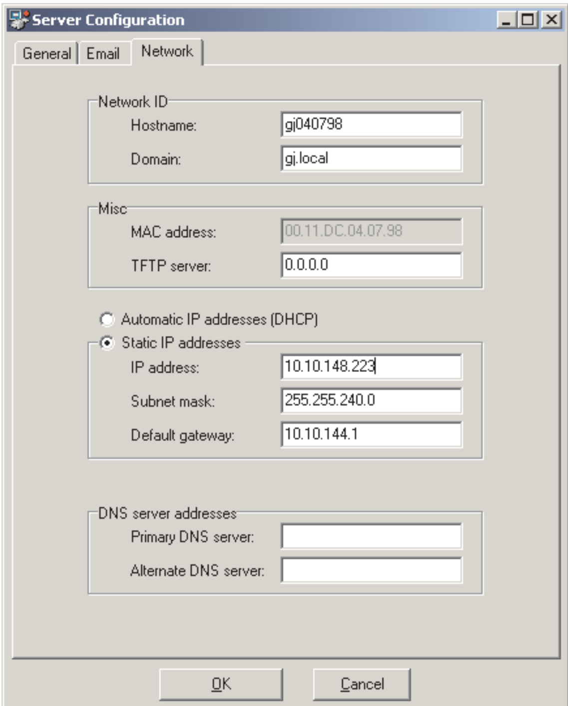
In case of a permanent connection to a local installation of the Remote Enabling System via a LAN the IP address of the equipment needs to be set to a static IP address:

- Contact the local IT administrator for obtaining an IP address.
- Enter 'Server Admin' (1).
- Select the processor IP address 169.254.11.xx (3) and click 'Change access level' (5).
- Enter Password 'duy'.
- Select 'Config' (6)

- Select 'Network'.



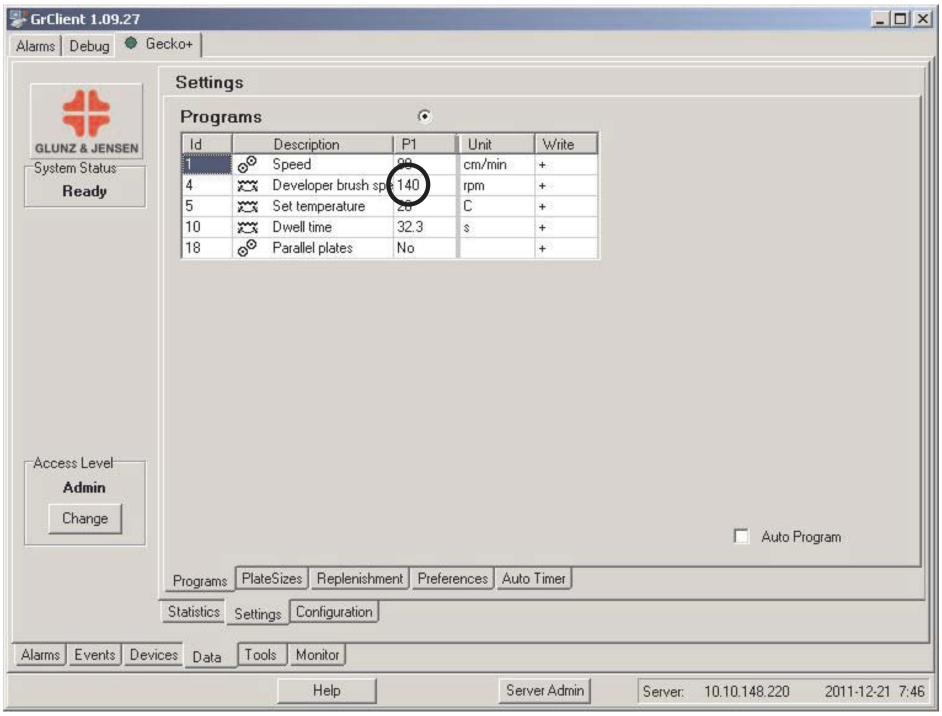
- Select the static IP addresses and change the IP address field to the IP address informed by the IT administrator.
- Click OK and confirm 'Restart' by pressing 'OK'.



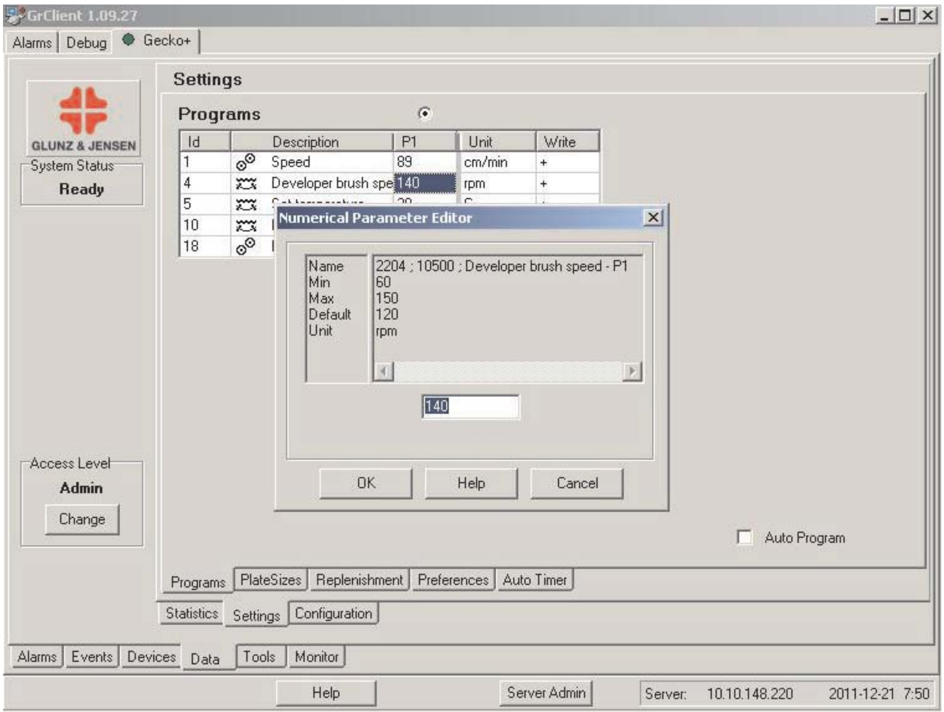
- When the Remote Enabling is ready, please verify, on the processors control panel, (by scrolling to the IP address marked with ) that the IP address now listed is identical to the one added in 'Static IP address' in the Remote Enabling System.

Change of processor´s parameters

- Press the processor tab (4).
- Select Data -> Settings -> Programs
- The processor's parameters list will be shown in the 'Settings' view and new settings can be made.



- Double click on the parameter.



- Change the value of the parameter.
- Press OK.

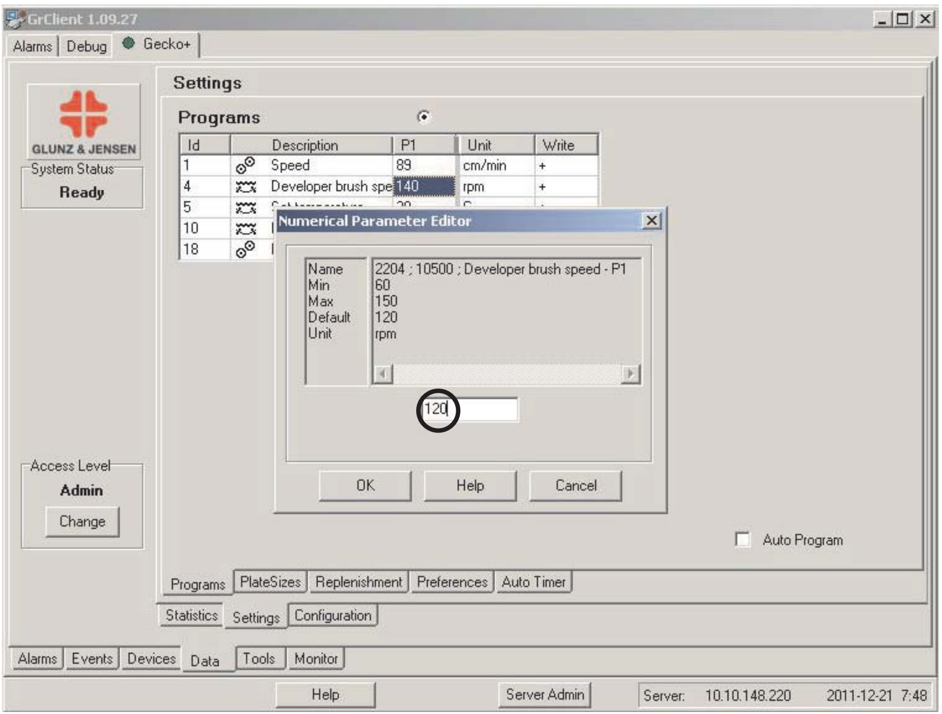
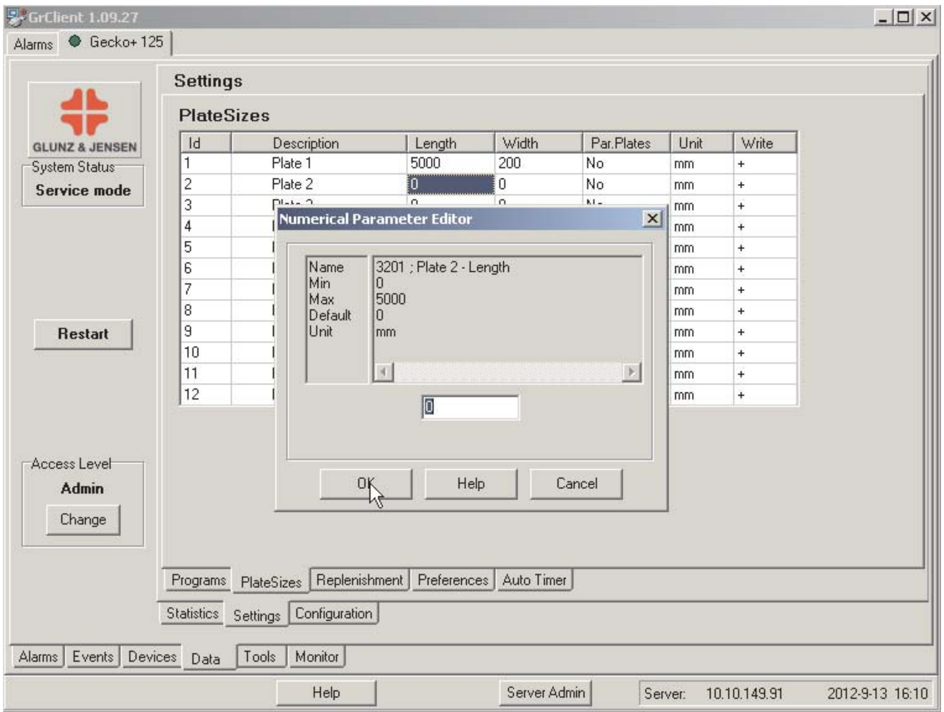


Plate sizes

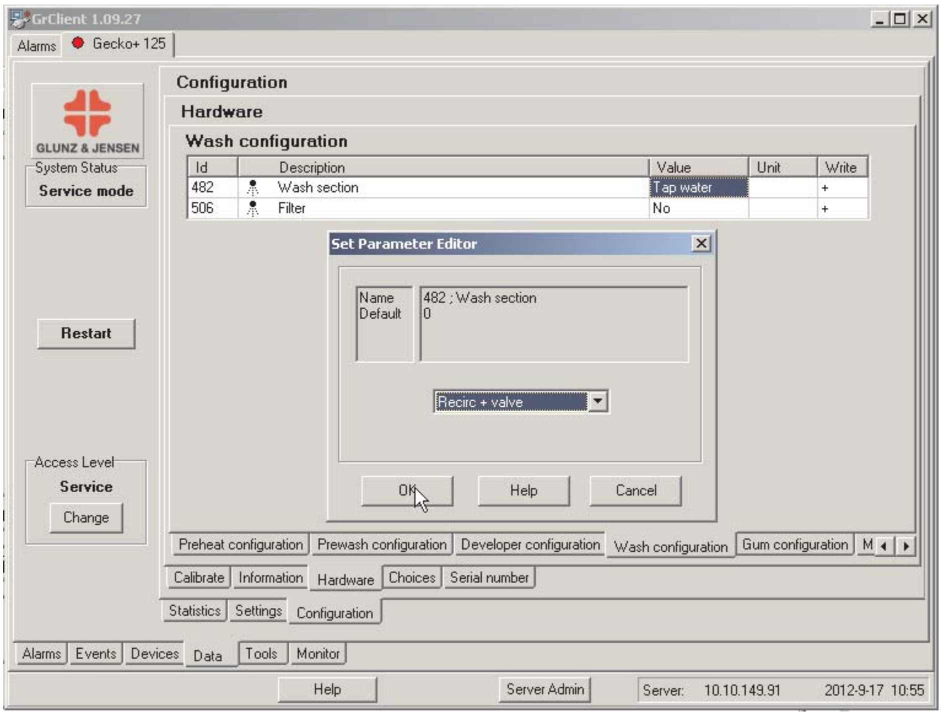
Plate sizes must be entered in order to obtain exact calculation of replenishment.

- Select 'Data' -> 'Settings' -> 'Plate sizes'.
- Define new, or select already used plate sizes.

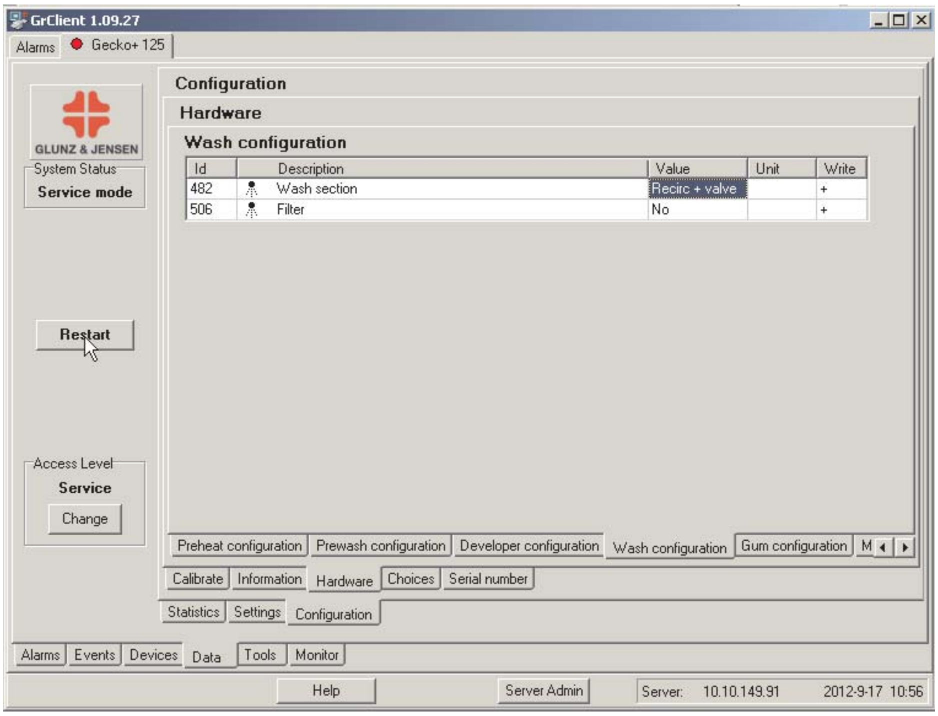


Change of wash configuration

- Click 'Change access level' and set to 'Service'.
- Enter Password 'duy'.
- Go to 'Data' -> 'Configuration' -> 'Hardware' -> 'Wash configuration'.
- Double click on 'Tap water' and set it to 'Recirc + valve'.
- Click OK.



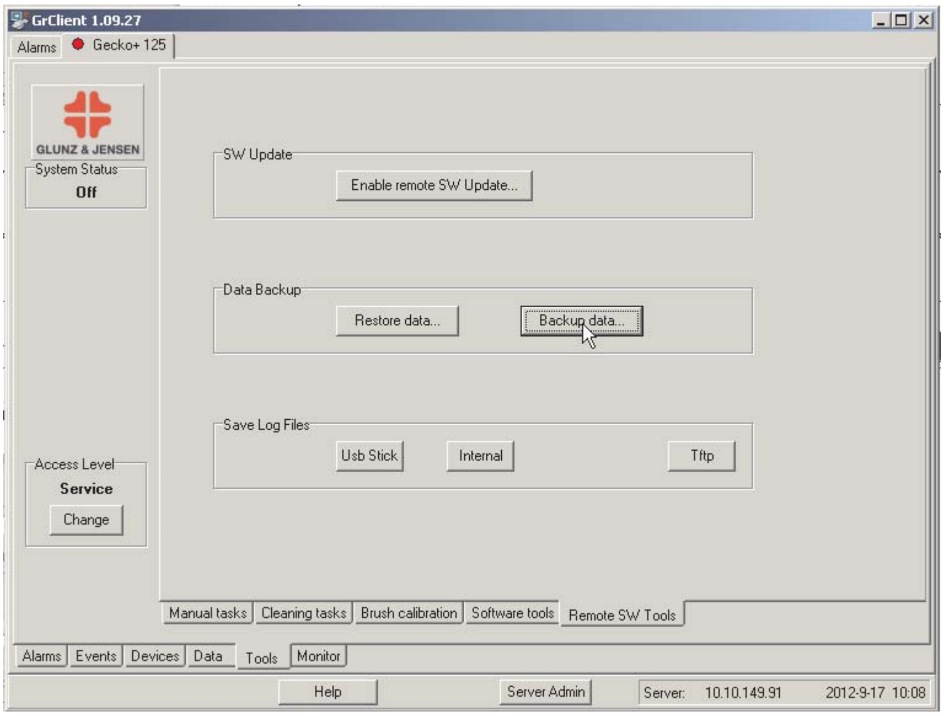
- Click 'Restart'



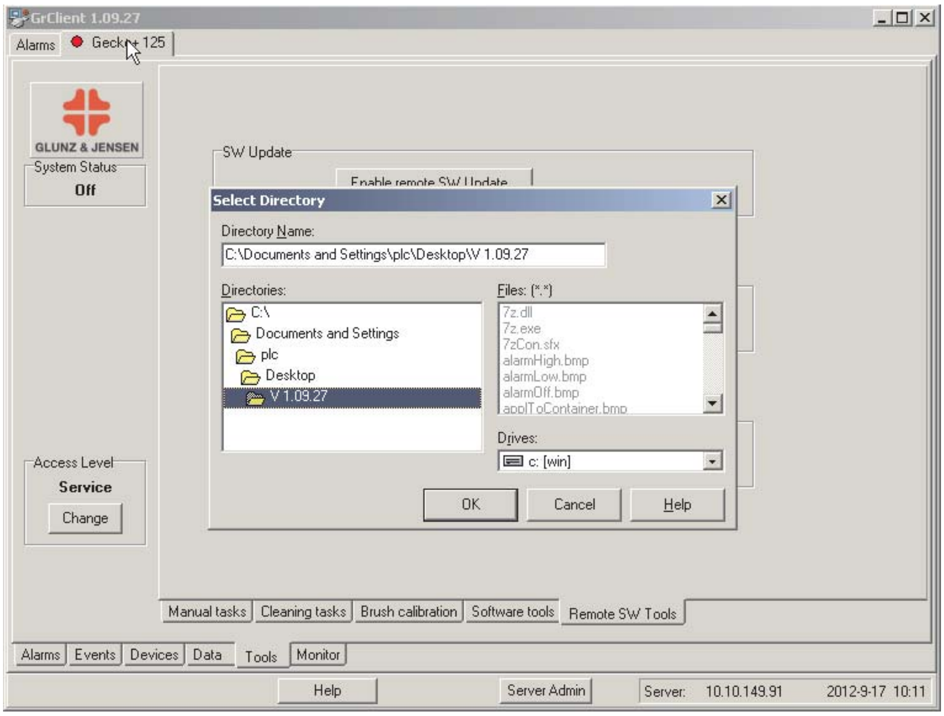
Configuration file

Save a copy of the configuration file locally, and on the USB stick once the installation is finished.

- Set access level to 'Service'.
- Go to 'Tools' -> 'Remote SW Tools'.
- Click 'Backup data'.



- Select the folder where the file will be saved and click OK.



Part 4: Maintenance

General

This chapter holds the special service information such as adjusting procedures, cleaning of pumps etc.

For user related maintenance and cleaning procedures refer to the Plate Processor User's Manual.

Download of software for upgrade or repair purpose is available from the manufacturer's web site: www.glunz-jensen.com.

WARNING!
Please note that where this label appears on the processor, electrical shock hazard still exists when the main switch is turned off.

DANGER

ELECTRICAL SHOCK HAZARD

DISCONNECT ALL EXTERNAL POWER SUPPLY BEFORE SERVICING

TO BE SERVICED BY AUTHORIZED PERSONNEL ONLY

RISQUE DE CHOC ÉLECTRIQUE

AVANT TOUTE INTERVENTION, DÉBRANCHER TOUTES LES SOURCES DE COURANT

MAINTENANCE PAR PERSONNEL AUTORISÉ SEULEMENT

WARNING!
When performing any service, maintenance, calibration, or trouble shooting etc. it may be necessary to override the function of the processor's interlock switches.
In these cases please be aware, that the processor's jog-function is still active, making the drive system run idle at intervals.

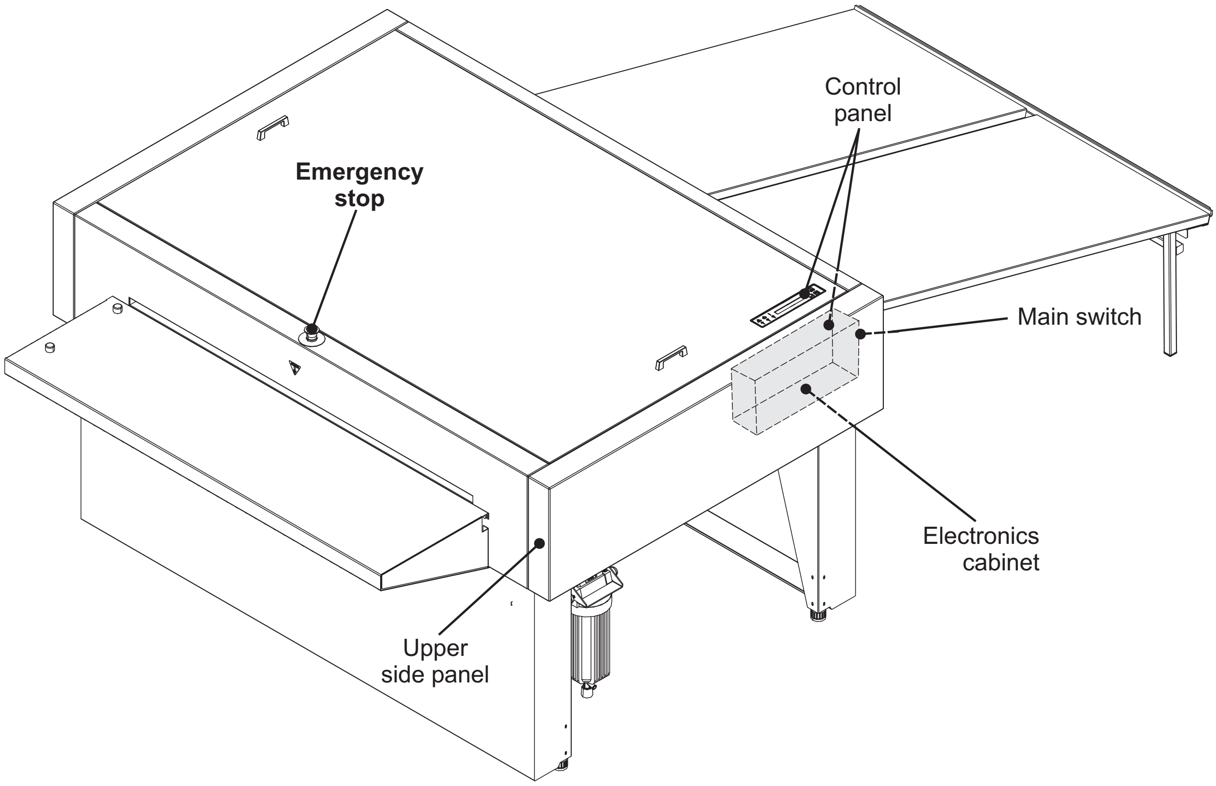
Safety check

Below described safety check should be performed at least once a year.

Electrical

(Refer to the electrical diagrams in the back of this manual).

- **Check proper function of:**
  - **Lid switch(es):**
    Processor must stop when the switch(es) is deactivated.
  - **Main switch:**
    Processor must turn off when set to "0".
  - **Emergency stop:**
    Processor must turn off when activated.



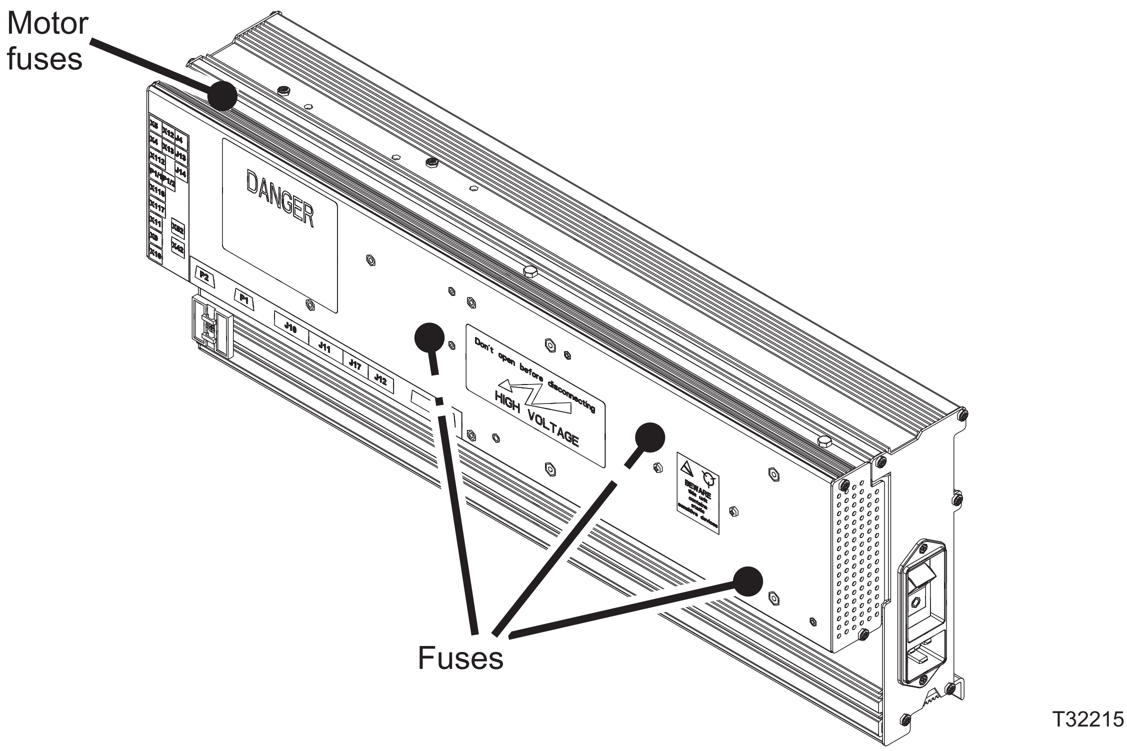
Mechanical

- **Check proper function/location of:**
  - **Upper side panels, left/right:**
    Make sure they are properly secured with 2 screws each.
  - **Lid, electronics cabinet:**
    Make sure the lid is secured by screws.

Fuses

Motor fuses F17 and F18 are located in cables leading to connectors X4 and X5.

Other fuses for the various functions are located in the electronics cabinet behind the right fender. The fuses are placed on the PCU board and in the fuseholder on the inside of the cabinet bottom and on the PSU board on the inside of the cabinet lid.



When changing a fuse, first switch off all power to the machine.
Always ensure that the new fuse is of the correct rating according to the label.

Motor fuses

Fuse	Fuse for	Type/Part no.
F17	Transport motor M1	5AT, 6.3 X32 mm S/B 5659
F18	Brush motor M2	4AT,6.3 X 32mm 6896

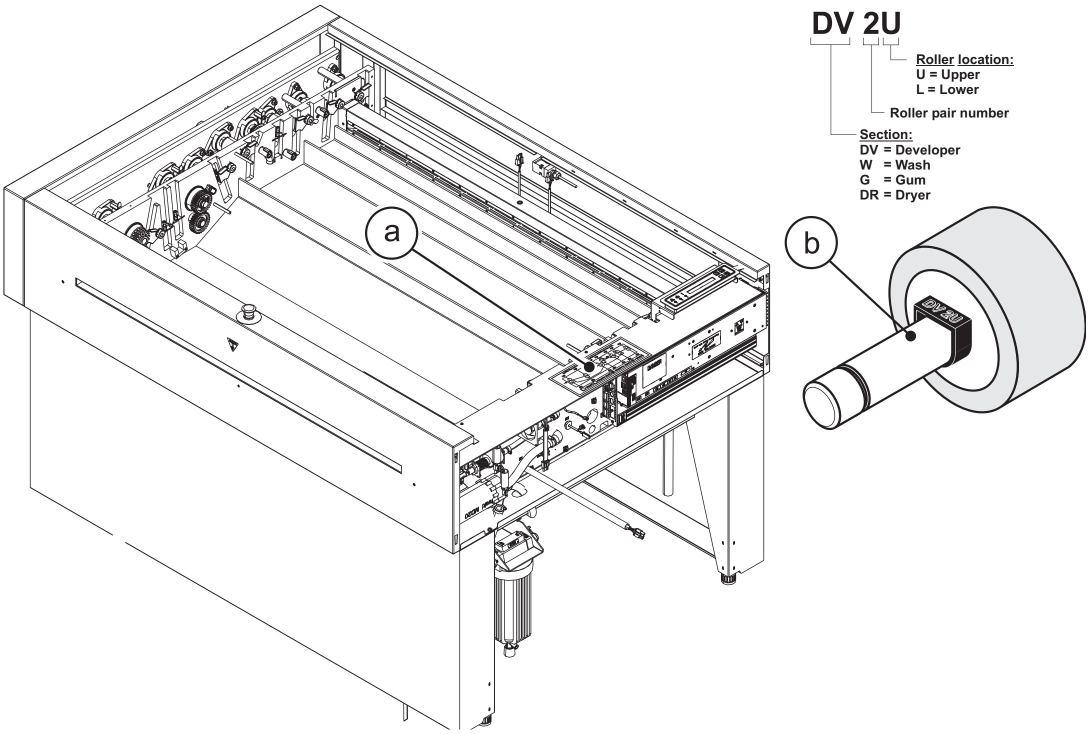
PCB fuses

Fuse	Fuse for	Type/Part no.
F1 & F2 & F3	mains	12AT, 6.3 x 32 mm 5527

Rollers and brush rollers

General

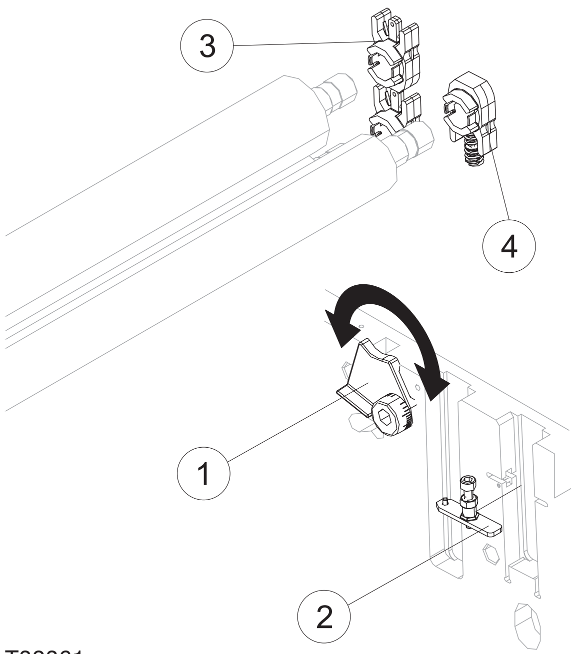
Label showing the roller configuration **(a)** is placed on the top of the upper safety cover and on page 3-5 in this manual. Each brush/roller is marked with a small number **(b)**. Install the rollers by referring to the roller numbers on the label.



Installation of rollers

At least two persons are required for this operation.

- Open the locks **(1)** and dismount the brush adjustments **(2)**.
- Mount the bearings on the transport rollers ensuring that the bearings **(3)** are turned upwards as shown on the illustration on the opposite page.
- Mount the bearings on the brush rollers ensuring that the bearings **(4)** are turned downwards with the spring.
- Insert the rollers into the clutches, then lower the rollers into the grooves and then close the locks **(1), a**nd mount the adjustments **(2)**.



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Cleaning

IMPORTANT!

Thorough cleaning of the processor tank interior, tank parts, pumps, filters etc. on a regular basis will minimize the risk of sediment build-up in and around vital parts of the equipment and prolong the lifetime of the equipment.

Cleaning accessories

Never use any hard tools or abrasive materials when cleaning any part of the processor.

Apron, rubber gloves and eye goggles.
For personal protection

Lint-free cloth, sponge and soft brush.
For cleaning of rollers, guides, tank walls, and all surfaces, especially the exit table and the feed table (if fitted).

Long-handled bottle brush and thin wire (i.e. Paper clip).
For cleaning the inside and the holes of the spray tubes.

Cleaning agents

Never use cleaning agents containing chlorinated solvents, acetic or phosphoric acid. These constitute a health hazard and could damage the processor.

Cleaning components with anything other than a mild detergent or a recommended cleaning agent may cause irreversible damage and invalidate any warranty.

Standard recommendations

Warm water 35-40°C (95-104°F).
For normal cleaning purposes and to rinse after using other cleaning agents.

Citric acid 10%/Nitric acid 5%
For major cleaning purposes.

Commercially available biocide/strong alkalic liquid
For cleaning off heavy algae-, fungal- or bacterial growth in the wash section.

Special recommendations

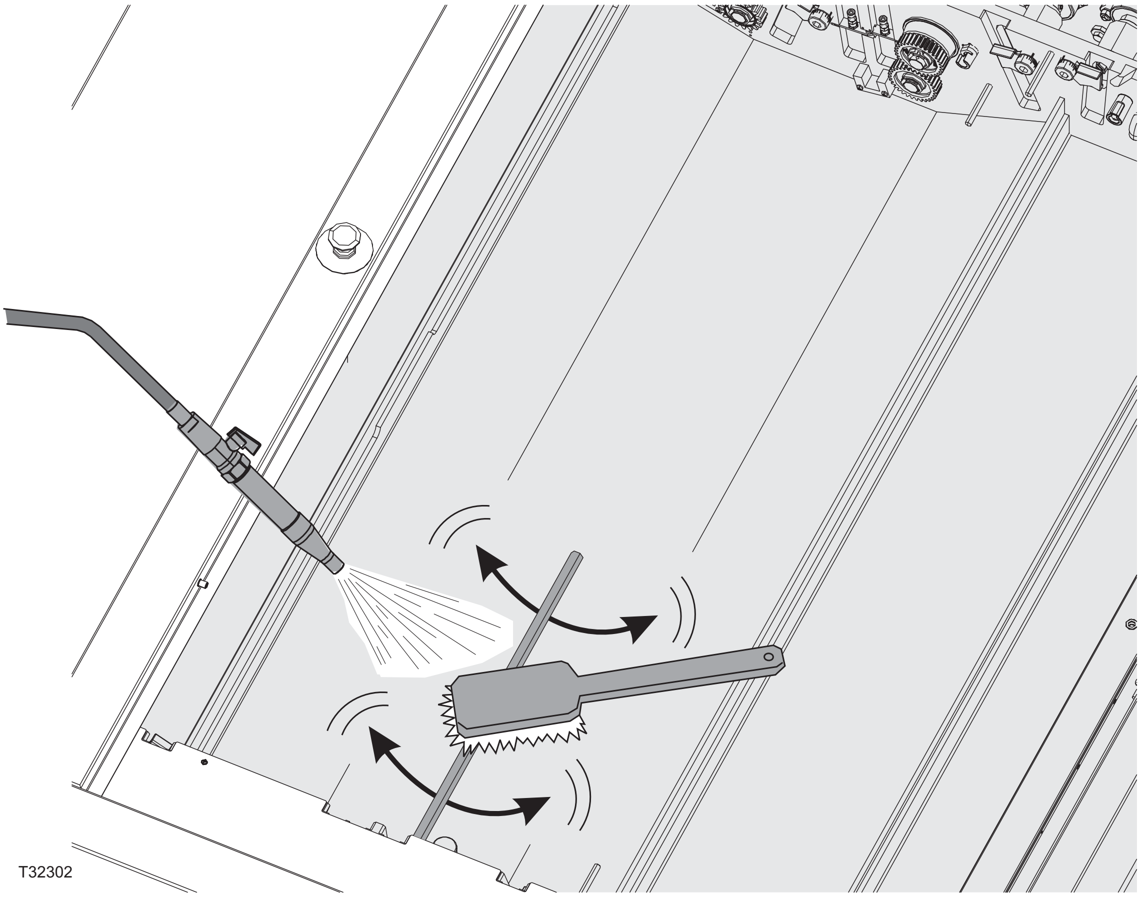
As some chemicals may require special cleaning agents, contact your chemicals supplier for recommendations about cleaning agents for your processor.

Cleaning of developer heating element

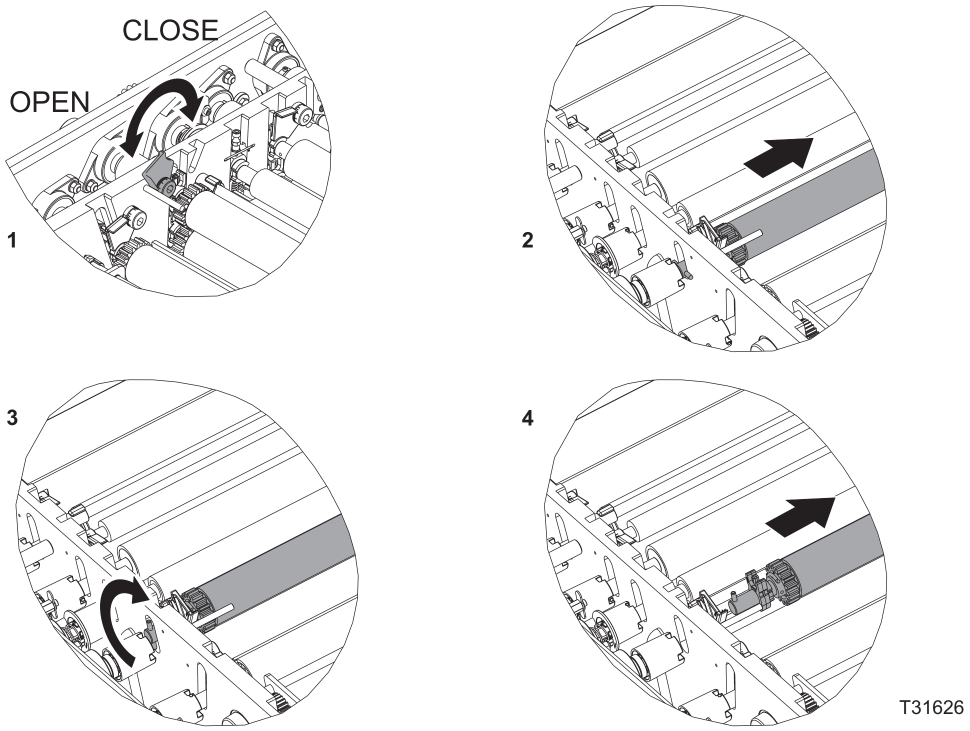
CAUTION!

Keeping the developer heating element and it's surroundings clean, eleminates the risk of sediment build-up underneath the heating element, and eleminates the risk of heating damages of the tank.

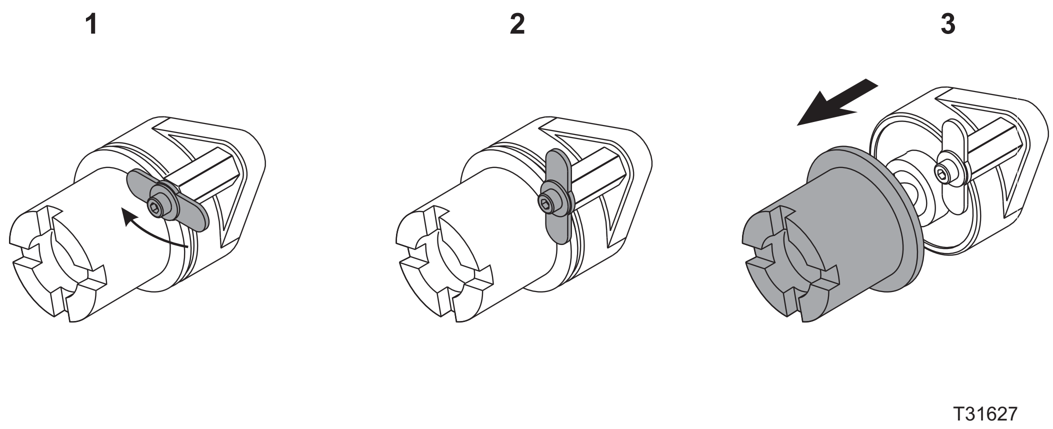
When cleaning the tank, make sure to wash off all residues around the developer heating element. Use plenty of water, a soft brush and a soft cloth to clean the gab between the heating element and the tank bottom.
(See illustration below)



Removing rollers from clutch case



Removing drive clutch from clutch bearings



Developer section

Normal cleaning

- Turn the processor off.
- Remove the top cover.
- Drain the tank.
- Remove spray tubes and rollers from the section.
- Clean rollers with a cloth or soft brush and water.
- Wash the tank bottom and walls with water using a cloth or soft brush.
- Clean the spray bars outside with a cloth or brush and water and the inside using a long-handled bottle brush.
  Clean the holes in the spray bars with a piece of thin wire (e.g. paper clip).
- Make sure that all parts are replaced in their original positions after cleaning. Please refer to the label of roller configuration placed on the top of the upper safety covercover.
- Mount back the top cover and press the stand-by key to start up the processor.

Major cleaning

- Follow the procedure described for normal cleaning but use a solution of tank cleaner if needed.

Wash section

Normal cleaning

- Turn the processor off.
- Remove the top cover.
- Drain the tank.
- Remove spray tubes, transport rollers and brush from the section.
- Clean transport rollers with a cloth or soft brush and water.
- While running water over the brush roller, draw it through your hand (use rubber gloves).
- Wash the tank bottom and walls with water using a cloth or soft brush, removing all slime.
- Clean the spray bars outside with a cloth or toothbrush and water and the inside using a long-handled bottle brush.
  Clean the holes in the spray bars with a piece of thin wire (e.g. paper clip).
- Make sure that all parts are replaced in their original positions after cleaning.
- Mount back the top cover and press the stand-by key to start up the processor.

Major cleaning

- Follow procedure described for normal cleaning, but use a 10% citric acid solution instead of water.

Gum section

Daily cleaning

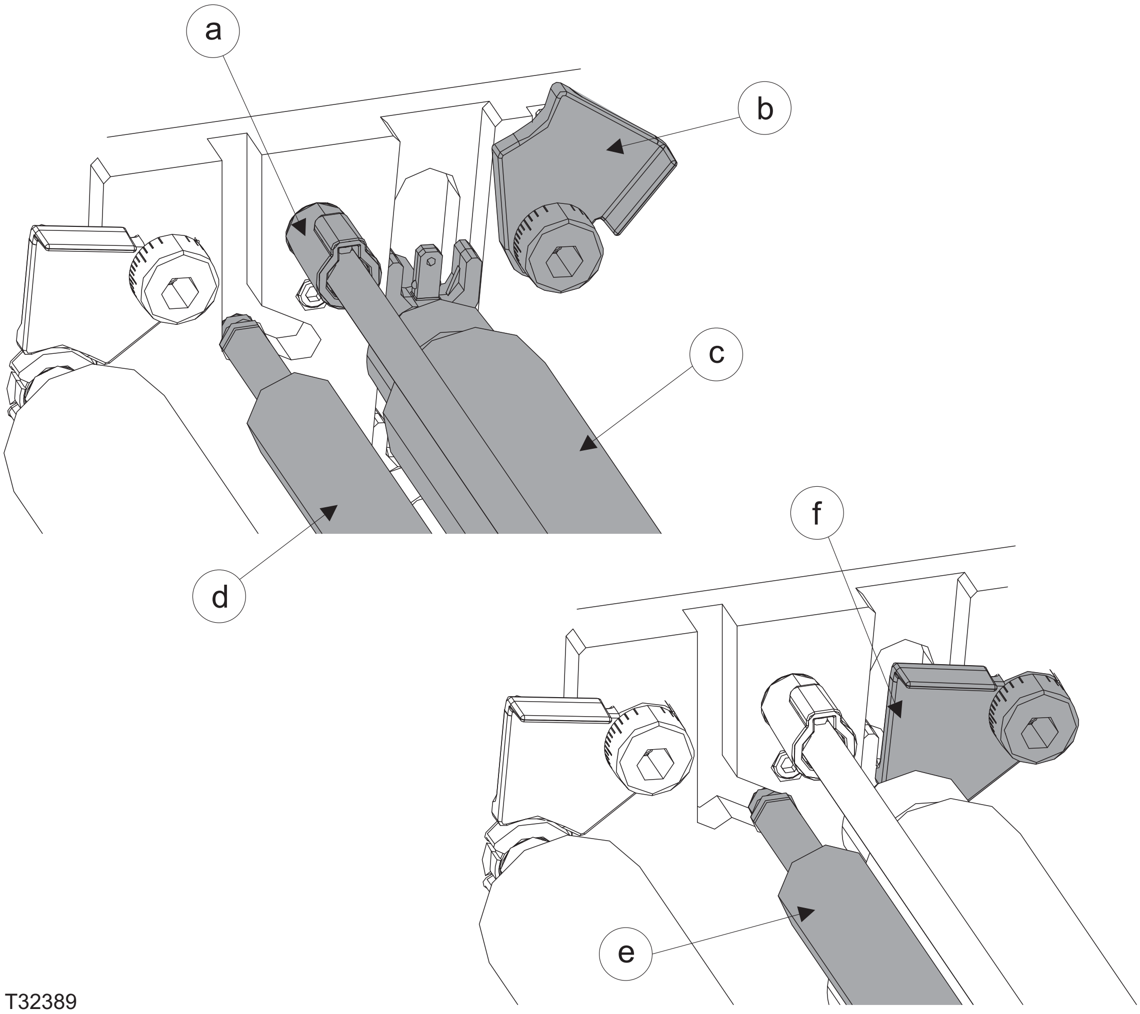
The gum lay-on roller ensures a uniform distribution of gum on the gum roller. The lay-on roller needs to be cleaned each time the processor is shut down in order to ensure proper distribution of gum to the plates. Follow the steps below:

Shut down:

- Shut down the processor at the main switch.
- Remove the top cover.
- Take the gum spray tube (a) out and clean it.
- Take out the lay-on roller and after cleaning place it in the rest position (d).
- Release the roller lock (b) and clean the upper gum roller (c) with a moist cloth.
- Place back the top cover.

Start-up:

- Remove the top cover.
- Lower the lay-on roller to the process position (e).
- Lock the roller lock (f).
- Mount back the top cover.



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Major cleaning

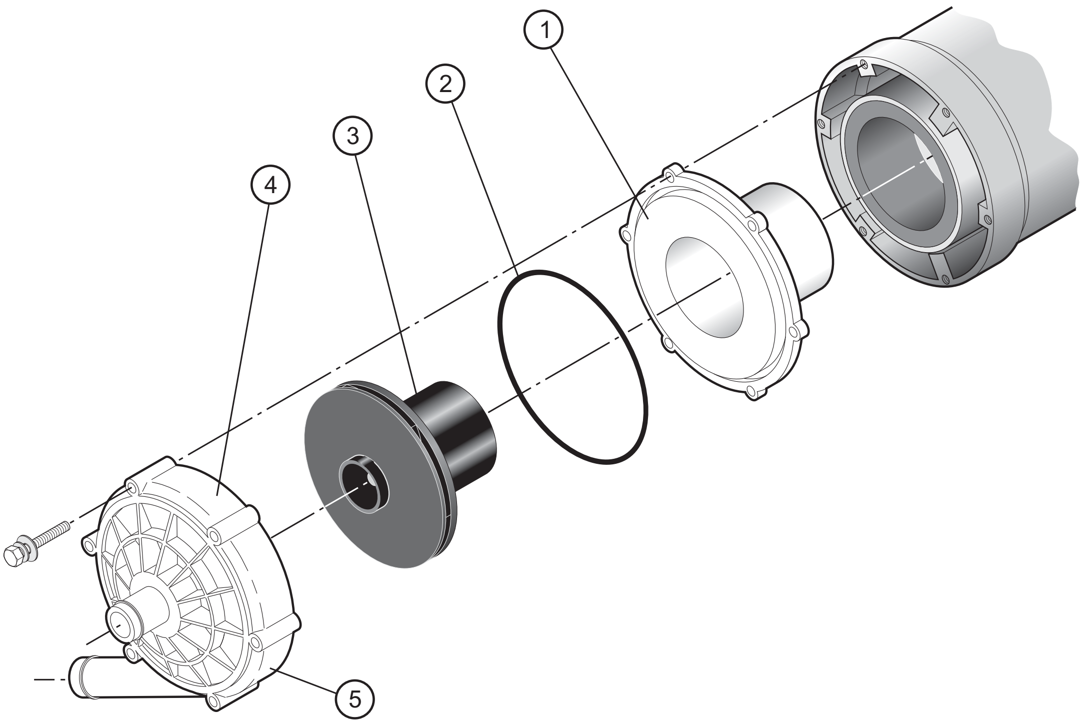
- Stop the processor and replace the gum container with a container with hot water.
- Start the cleaning cycle via the control panel and let run.
- Stop the processor and replace the hot water container with the Gum container.

Cleaning of the circulation pump

See illustration below.

If the circulation pump ceases to function properly clean the pump following this description.

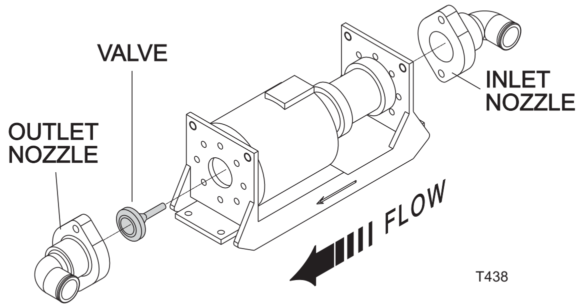
- Cut off the power to the unit by removing the top cover.
- Empty the tank section.
- Dismount the hoses from the pump. Be careful not to spill the chemicals on the floor.
- Note that the position of the outlet nozzle **(5)** should point as shown.
- Dismount the pump.
- Dismount the cover **(4)** and pull out the impeller **(3)** and the impeller housing **(1)**.
- Clean the inside of the cover, the impeller and the impeller housing in warm water.
- Reinstall in reverse order, observing that the outlet nozzle **(5)** of the cover is placed as it was before dismounting it, and that the O-ring **(2)** is placed correctly in the groove of the impeller housing **(1)**.



T31064

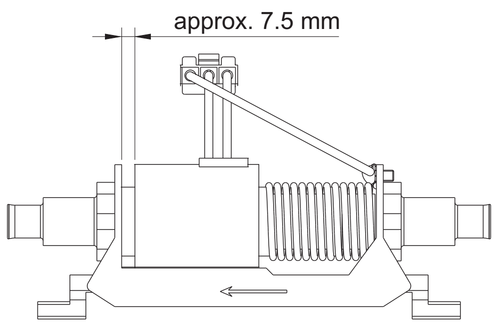
Cleaning of valves in the replenish and small circulation pump

If a replenishment or a small circulation pump ceases to function properly, run it with some warm water in order to clear the pump of chemicals.
If this does not help, take the pump apart and clean the small valve in warm water.

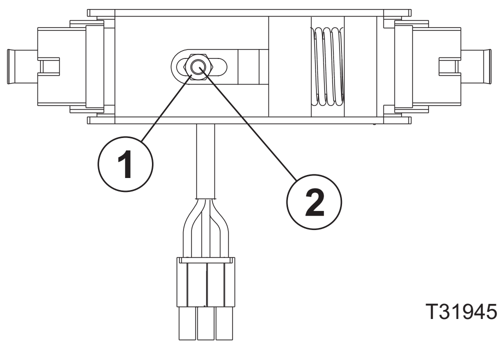


Adjustment of gum pump

The gum pump is set with a default pulsation from the factory. In case the amount of the gum pumped into the application roller is too high or too low adjustment of the pulsation can be changed by adjusting as described below.



Loosen the nut **(1)** and adjust the screw **(2)** on the bottom of the pump bracket to set up the correct amount of gum by moving the coil of the pump forward or backward.



Cleaning of spray tubes

Developer and gum section

Clean the spray tubes in the developer section with hot water to remove potential blocking of the holes. Occasionally it may be necessary to use a drill bit to clean the holes and remove sediments mechanically.

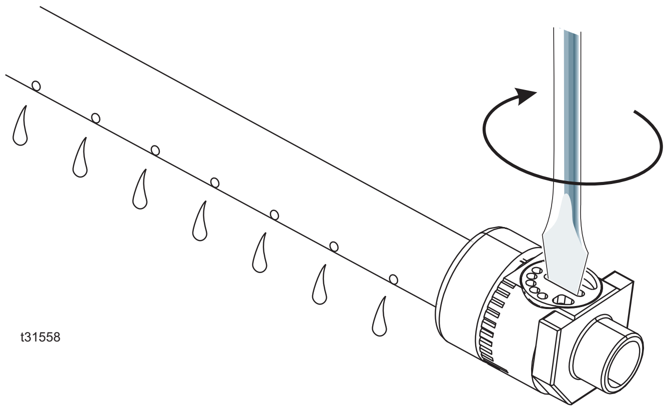
Wash section

Clean the spray tubes in the wash section with hot water to remove potential blocking of the holes. Occasionally, depending on the local water quality, it may be necessary to use a drill bit to clean the holes and remove sediments mechanically.

Adjustment of spray tubes

The pressure in the spray tubes can be adjusted to obtain the best possible application of water to the plate. Pressure is adjusted as shown on the illustration below.

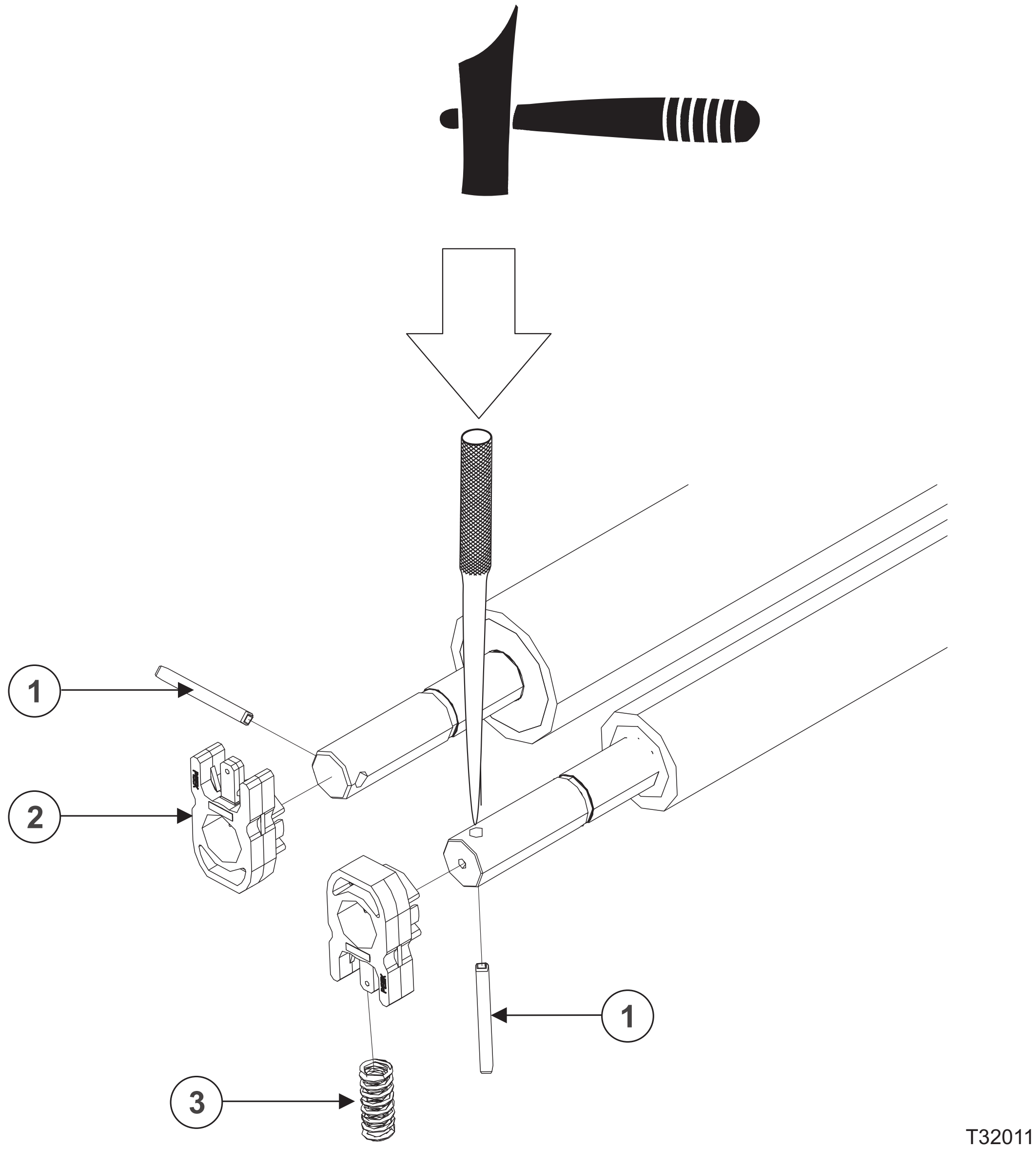
The valve is fully open from the factory. Normally no adjustments are necessary.



Replacement of bearings

See the illustration below.

- Pull out the pin (1) at the gear side of the rollers. Use a 6 mm mandrel to drive out the pin.
- Remove the roller bearings **(2).**
- Remove the springs **(3)** from the bearings on the brush rollers.
- Replace the bearing.
- Mount back the springs on the new bearings for the brush rollers.



Adjusting the brush pressure

General

The following describes a standard adjustment for the brushes in the developer and wash sections. The brush adjustment can vary from one processor to another since it must apply to the specific plate and chemical type etc.

Tools:
- 5 mm hex T-key
- Test plate 100 x 200 x 0.15 mm (developed)

Processor conditions

Place the plate between the brush roller and the lower guide and activate the manual function button.
Recommended brush speed setting: default brush speed.

Preparations

- Lift up the processor top cover.
- Remove the upper roller **(1)** in the developer section before adjusting.
- Activate the interlock switch.
- Start ⏏ **(3)**.

Adjustment - method A

See top illustration opposite.

- While the brush **(4)** runs use the test plate **(5)** to test the brush pressure in both sides and in the middle. Make sure that the test plate **(5)** is entered at right angles **(5a)** to the rollers.
- Adjust the brush pressure on the screws **(6)** (clockwise = tighten) until you feel a slight grip ("kiss'n touch").
  Make sure that you obtain a uniform grip in both sides and in the middle.
- From this point turn the screws **(6)** 1/4 turn clockwise in each side. 1/4 turn is a common pressure which will work in most occasions. Please refer to plate manufacturers specifications.

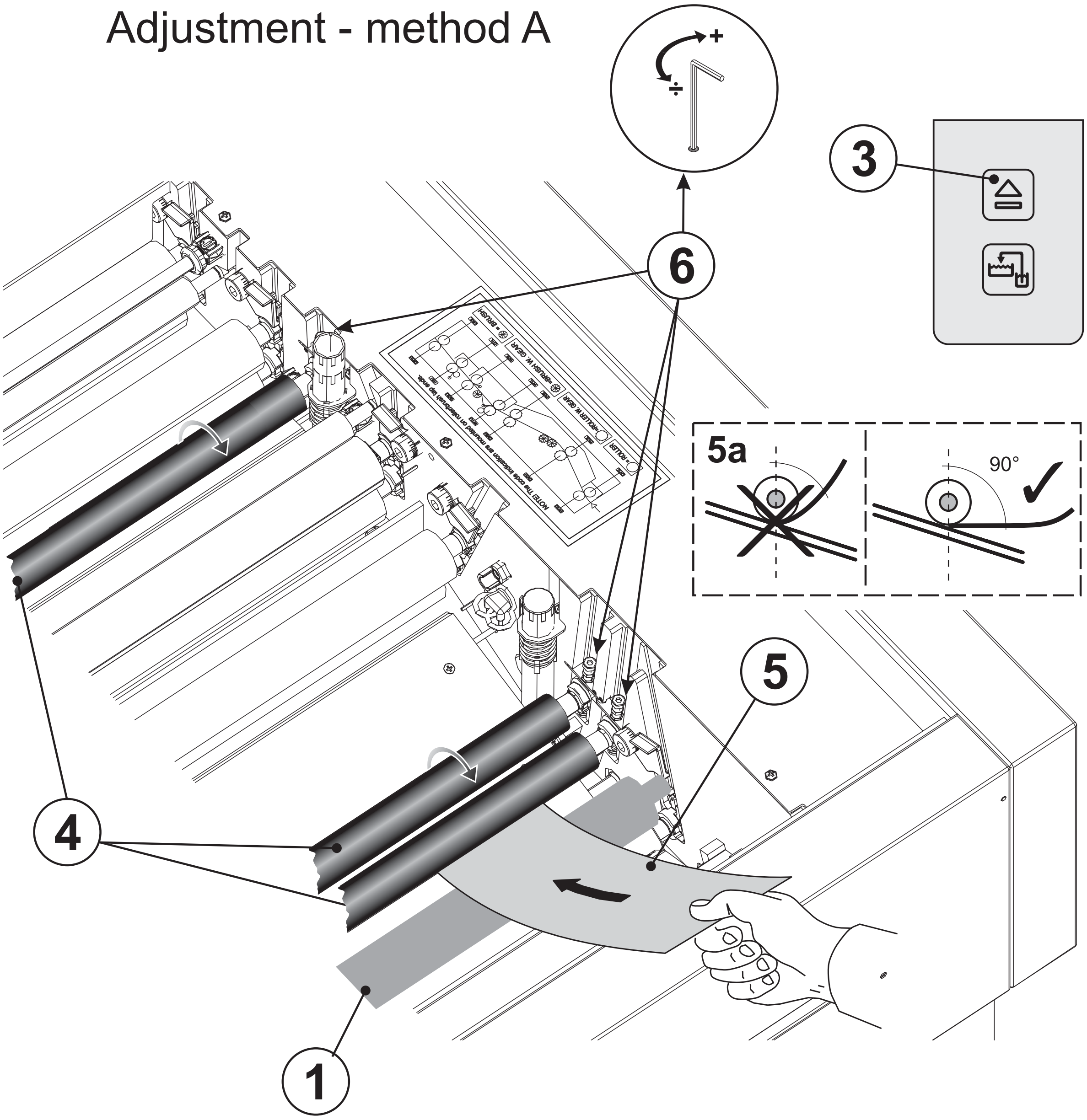
Adjustment - method B

See bottom illustration opposite.
Use a strip of film and a spring balance and proceed as follows:

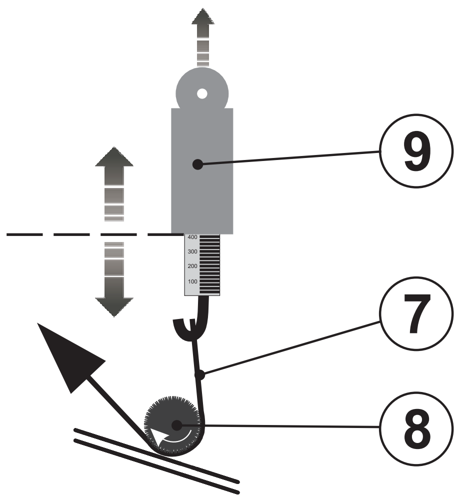
- Insert a strip of polyester film **(7)** (10 cm wide, approximately 50 cm long, 0.10 mm thick/4 x 20 x 1/128”) between the brush roller **(8)** and the lower roller (or guide).
- Activate the manual function button and hold the film strip with the spring balance **(9)** against the rotation of the brush, pulling the spring balance upwards.
- Adjust the pressure to a balance depending on a recommendation from plate manufacturer over the entire brush roller width.

Repeat the procedure for the all brush rollers. All brushes should be adjusted to the same settings.

Adjustment - method A



Adjustment - method B



T31942

Adjusting the transport rollers

Tools:

– 10 mm hex key.

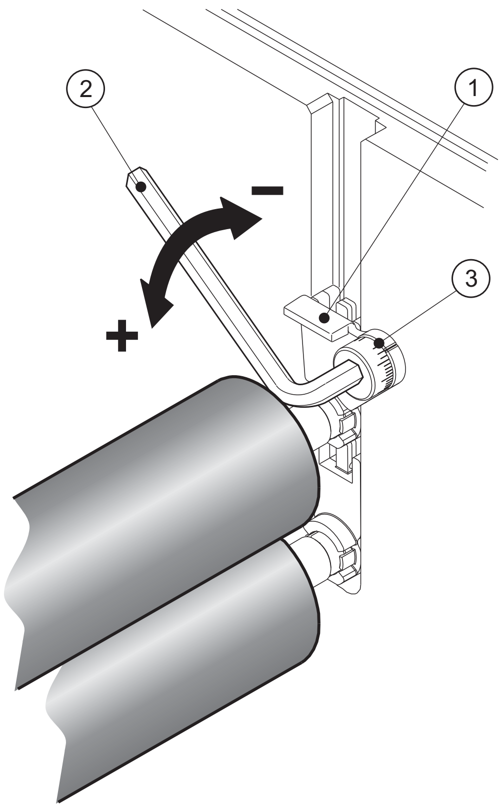
General

- Make sure that roller locks **(1)** are properly closed.
- Use key **(2)** to turn eccentrics **(3)**. Turn eccentric in locking direction to increase roller pressure and against locking direction to decrease pressure.

Adjust the rollers as follows:

- Turn eccentrics **(3)** against the locking direction until the roller locks **(1)** in both sides can move freely between the roller bearings.
- Turn eccentrics **(3)** in the locking direction until the locks **(1)** in both sides require a light push to lock (feel the 'click').
- From this point turn eccentrics **(3)** 2.5 marks in the locking direction.

The adjustment must be made on locks on both sides of the tank in order to reach correct pressure on whole width of the roller.



T 31642

Mounting of r-clips for gears

Following the lower instructions is very important for the correct function of the processor.

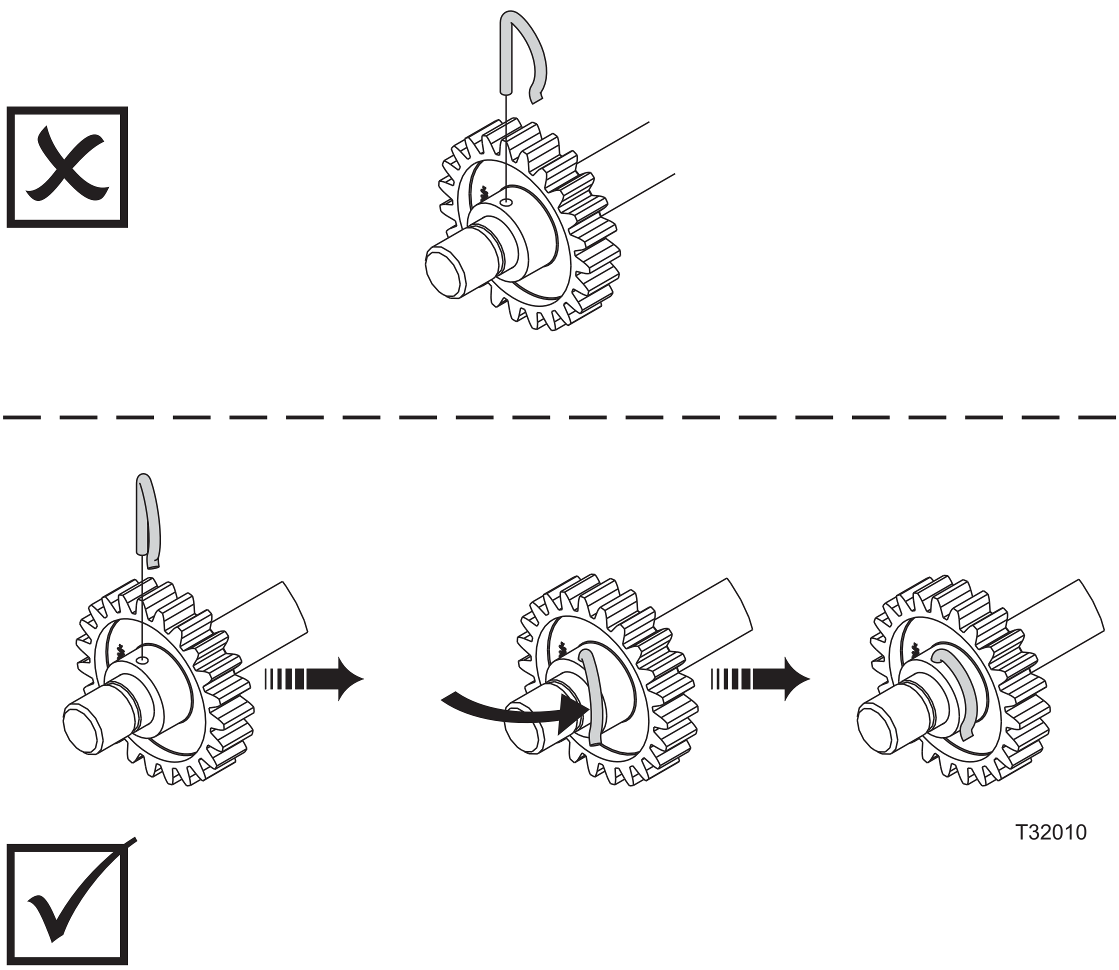
See the illustration below.

NEVER

mount R-clips as shown in the upper illustration.

ALWAYS

mount R-clips as shown in the lower illustration.

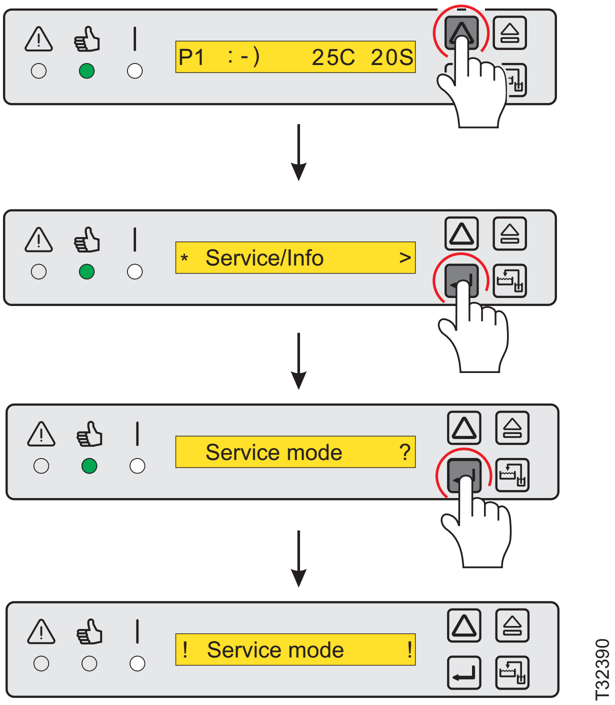


T32010

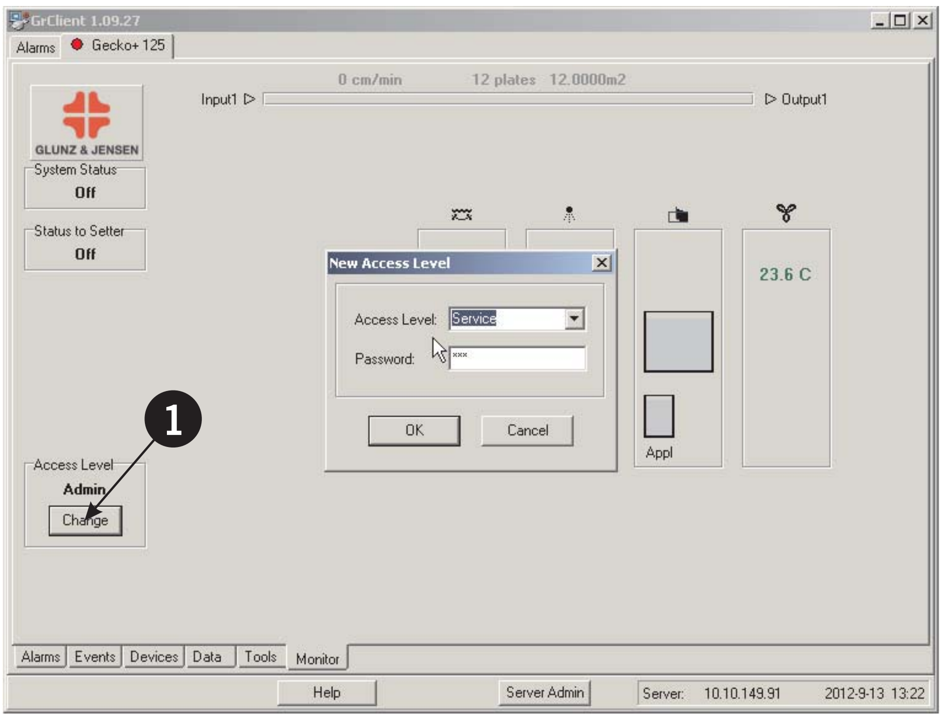
Calibrating of the replenish pump

Calibrating of the pump is done via the Remote Enabling System. See page 3-10.

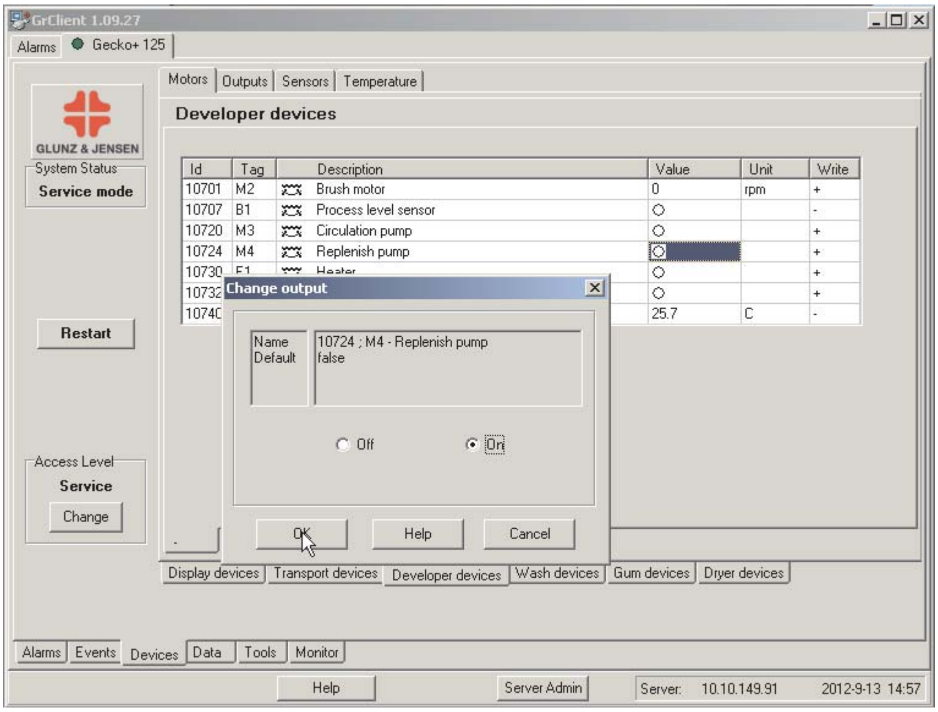
- Activate the service mode in the processor menu.



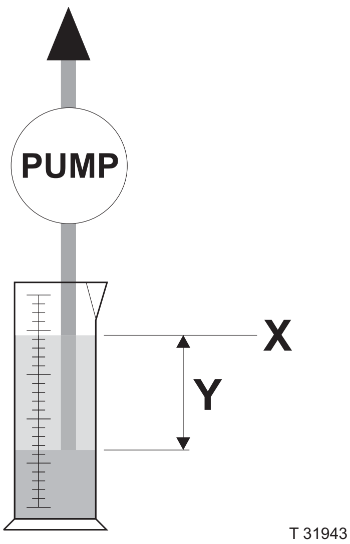
- Place the suction tube from the replenish pump into a measuring container with developer.
- Start up the Remote Enabling client.
- Click 'Change access level' (1)
- Enter Password 'duy'.



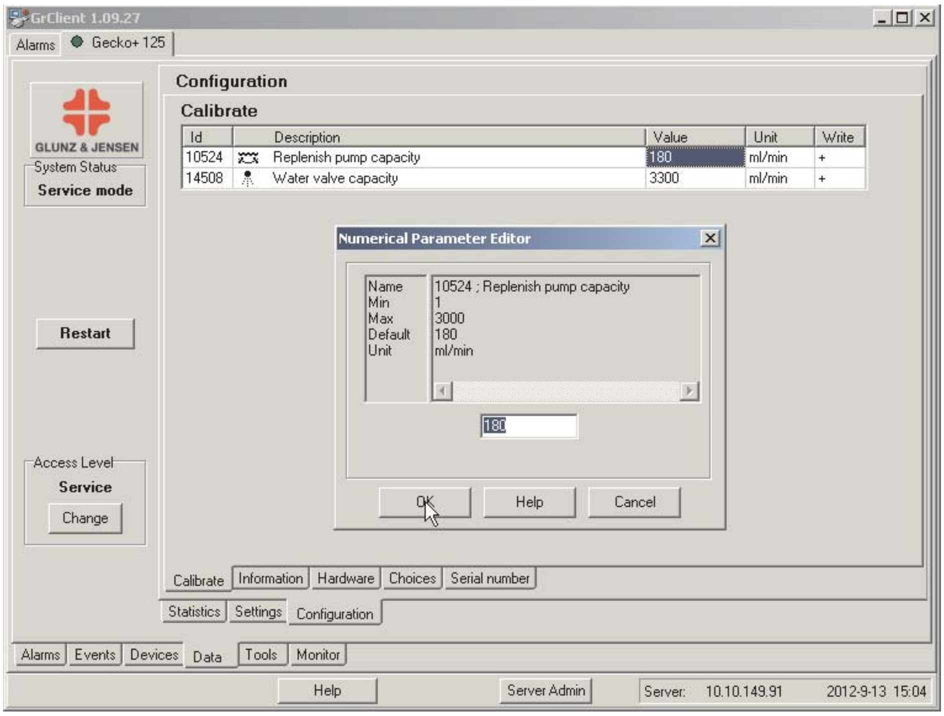
- Click on 'Devices' -> 'Developer devices'.
- Double click on 'Replenisher pump'.
- Start the pump to remove air from the tube and let the pump run till no air is in the tube.
- Stop the pump.



- Fill-up the container so it contains 2 litres of developer.
- Let the pump run for 1 min. exactly.



- Go to 'Data' ->'Configuration' -> 'Calibrate' -> 'Replenish pump'.
- Set the measured value.



Calibrating of solenoid valve

The processor must be in service mode, and access level must be set to 'Service' as described on page 4-18.

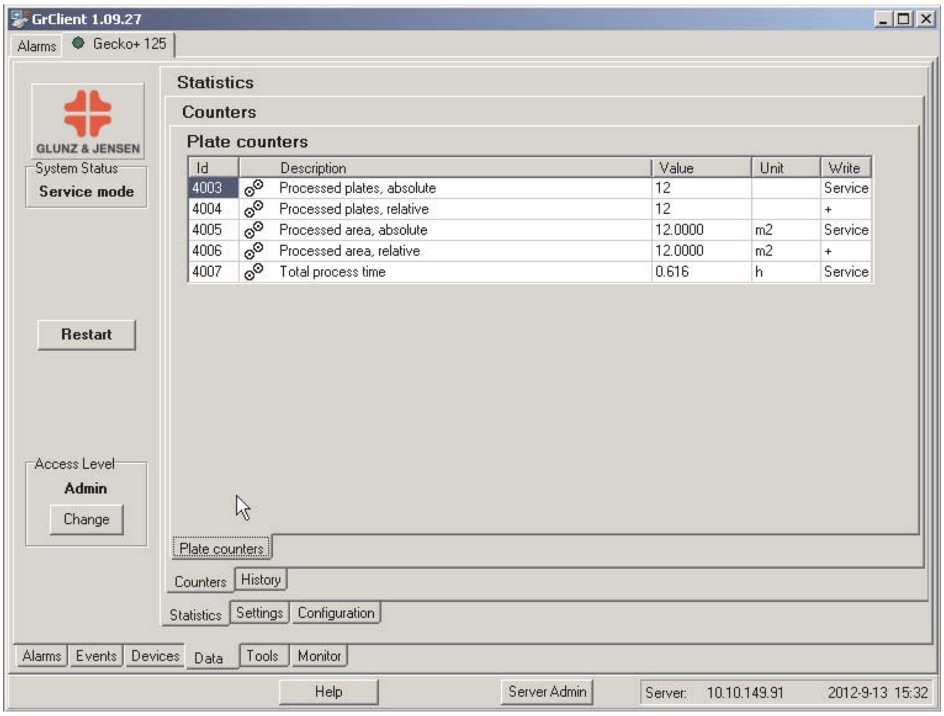
- Dismount the hose leading from solenoid valve to wash spray fitting, and place it into the measuring container.
- Go to 'Devices' ->'Wash devices'.
- Double click on 'Water valve' and let run for one minute.
- Measure the volume of water pumped into the container.
- Go to 'Data' ->'Configuration' -> 'Calibrate' -> 'Water valve capacity'.
- Set the measured value.

Chain servicing

Regular chain servicing is important if maximum life is to be achieved.

Find data regarding processed m^2 and processing hours via Remote Enabling System:

- Go to 'data' ->'Statistics' -> 'Counters' -> 'Plate counters'.



After processing of 400 hours/6,500 m^2

... whatever comes first

- Check chain tension and adjust if necessary. See chain adjustment procedure on page 4-26.

After processing of 2,500 hours/80,000 m

... whatever comes first:

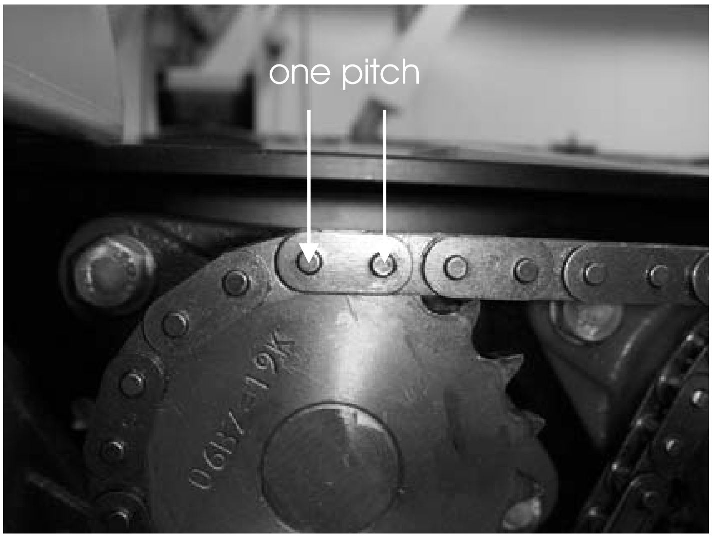
- Carry out the chain tension check.
- Check for wear on side plates of the chain link.
- Check for chain elongation. See the following page for how to check for potential chain wear.
- Check cleanliness of components, remove any accumulations of dirt or foreign materials.
- Check for shaft and sprockets alignment.
- Check for wear on sprockets.
- Check the condition of the lubricant, lubricate the chain working surfaces.

How to check for potential chain wear

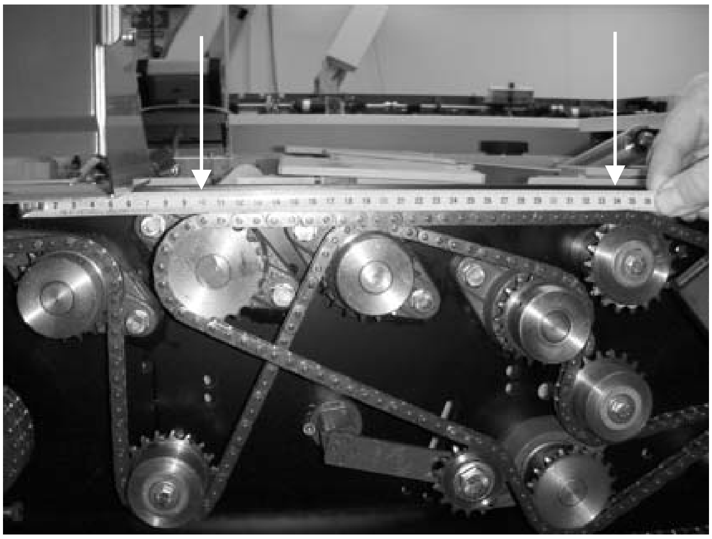
The below guides line should be followed after processing 2,500 hours/80,000 m^2 of plates.

Measure the length of the chain between the given number (see latter illustrations) of pitches.

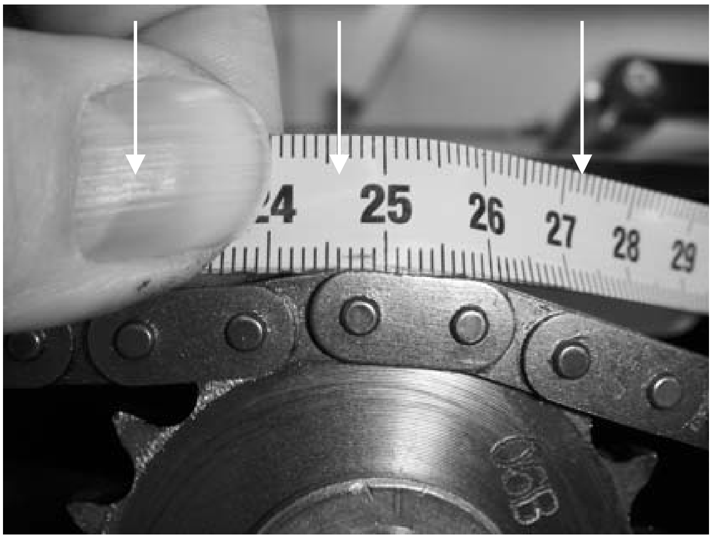
Measurement point



Measure between two given numbers of pitches



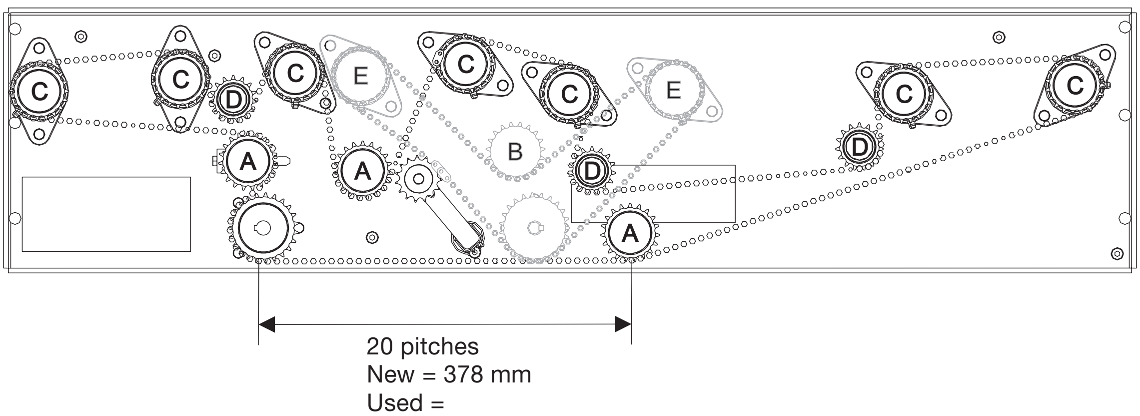
Control the length

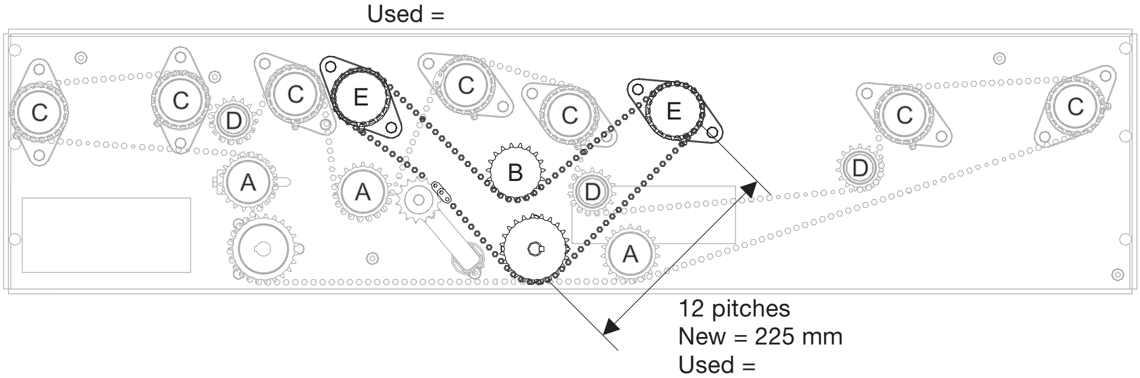


- Control the length of the chain to measure the extension of the chain by measuring the chain extension between the given numbers of pitches.
- See the recommendation at the drawing below.
- If the chain is over the given maximum length between the given numbers of pitches, it is recommended the chain be replaced.

Be aware that in case either the chain or the gears are worn out, both chain and gears have to be replaced.

To ensure continues high quality and maximize productivity and processor up-time, it is recommended to change the chains after 5000 production hours or 4 years what comes first.



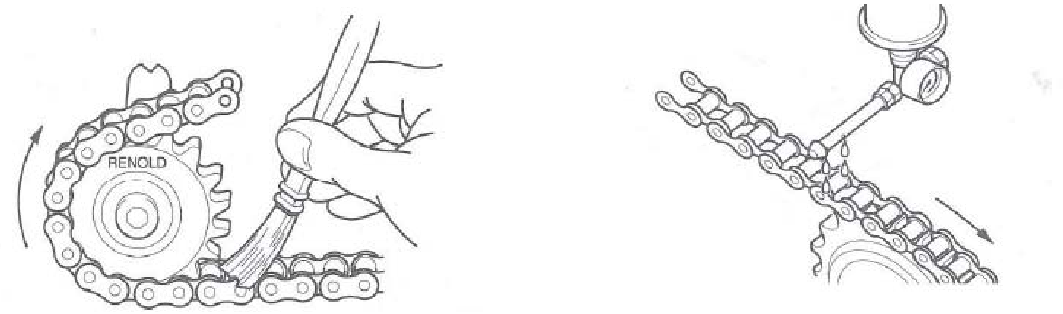


Lubrication:

Chain drive should be protected against dirt and moisture and be lubricated with good quality, non-detergent petroleum based oil. Re-lubrication of chain working surfaces is desirable.

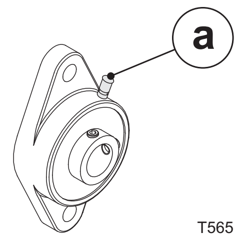
Heavy oils and greases are generally too thick to enter the chain working surfaces and should NOT be used.
Mineral Oil to ISO VG (SAE30) oil would be suitable.

Care must be taken to ensure that the lubricant reaches the bearing area of the chain. This can be done by directing the oil into the clearances between the inner and outer link plates, preferably at the point where the chain enters the sprocket on the bottom strand. Please see below:



T31682

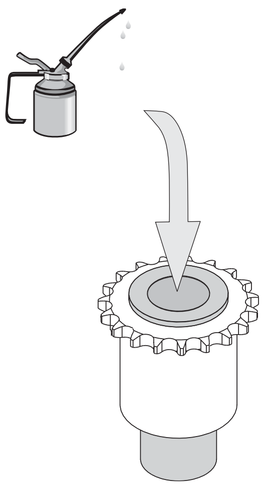
Some processors are manufactured with bearing with a lubricator nipple (a). There will be no need for grease/oil, as bearing has been lubricated from manufacturer of the bearing and it will last longer than the life time of your processor.



T565

Idler sleeve bearings servicing

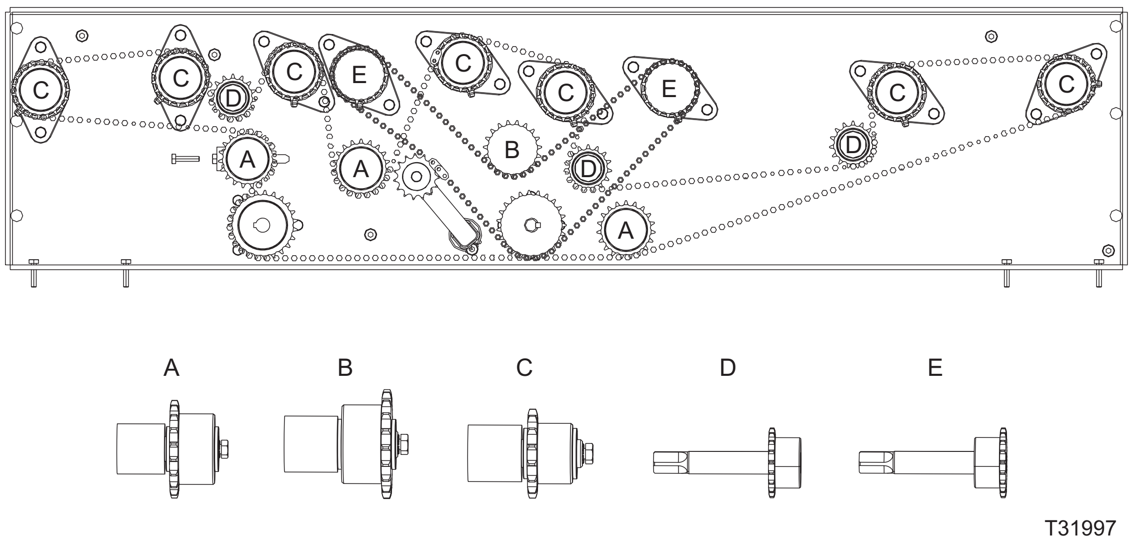
Once a year or for every 1,000 hours the idler sleeve bearings have to be lubricated as show on the illustation below.
Recommeded oil type: Mineral Oil to ISO VG (SAE30).



T32096

- Hold the bearing tight against your palm, fill it up with oil and press against the top and then make a tight pressure from both sides.
- The oil will then be squeezed through the bronze and tiny oil drops on the outside of the bronze bearing will appear.
- Alternative is to let the bearing stay in oil bath for 24 hour until it is completely moisten with oil before mounting.

The illustation below shows the idler sleeve bearings to be lubricated.

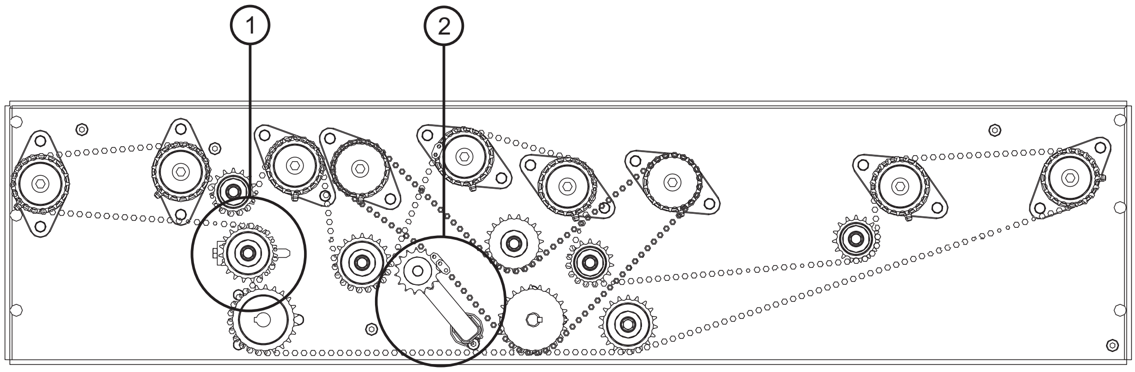


Chain adjustment procedure

Follow the procedure below when chain adjustment is needed.

Complete view

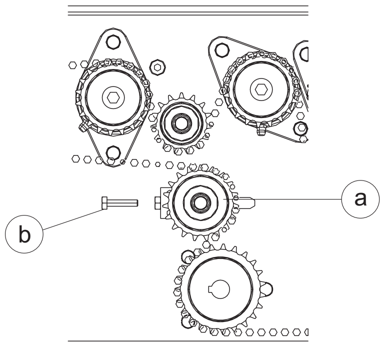
Refer to the steps described later and indicated in the drawing below.



T31999

Main chain (1)

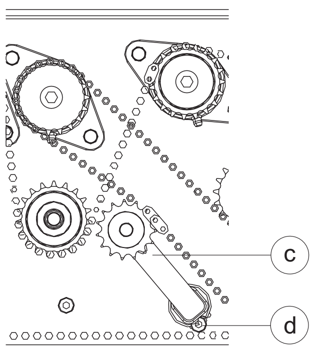
- Loosen sprocket **(a)** on drive plate backside. Loosen lock nut.
- Adjust chain tension on adjustment screw **(b)**.
- Fasten lock nut and fasten sprocket.



T32002

Scrub chain (2)

- Adjust the chain tensioner **(c)** until the notch is aligned with thread M5 **(d)**. Chain tension must be between 10° and 22.5°.
- Mount the lock screw and fasten the chain tensioner.



T32003

Preventive Maintenance Kit Program

To ensure continues high quality and maximize productivity and processor up-time, it is recommended to carry out preventive maintenance at regular intervals.

To facilitate this a Preventive Maintenance Program has been developed, consisting of a number of relevant service-parts to be replaced at specific service intervals.

It is recommended that the following Preventive Maintenance Kits are implemented, at the mentioned intervals, at which point the cycle will start over.

- Minor Preventive Maintenance at 1250 production hours or every year what comes first.
- Medium Preventive Maintenance at 2500 production hours or every year what comes first.
- Minor Preventive Maintenance at 3750 production hours or every year what comes first.
- Major Preventive Maintenance at 5000 production hours or every year what comes first.

Please refer to the Spare Parts manual for order numbers for particular kits.

Read more about our Preventive Maintenance Kits on www.glunz-jensen.com and see the content of the Preventive Maintenance Kits - or contact us at order-department@glunz-jensen.com.

Part 5: Trouble shooting

General

If the processor does not work properly, refer to the following pages to find the paragraph that comes closest to your problem.

The trouble shooting guide is divided into 4 sections:

A. Problems with the processor
B. Problems with processed material
C. PCU analyzing LED signals
D. MIO analyzing LED signals

For cleaning and maintenance subjects see the processor user manual and chapter 5 in this manual.

The electrical diagrams are located in Appendix A.

To change a fuse, switch off all power to the machine first.
Always ensure that the new fuse is of the correct rating according to the diagram.

WARNING!
When performing any service, maintenance, calibration, or trouble shooting etc. it may be necessary to override the function of the processor's interlock switches.
In these cases please be aware, that the processor's jog function is still active, making the drive system run idle at intervals.

Before starting trouble shooting

IMPORTANT!

Plates and chemicals are very sensitive materials and correct storage is vital to obtain a satisfactory production result. Incorrect storage may very well result in unsatisfactory processing quality etc.
Contact your local supplier for information about storage requirements for plates and chemicals.

Before making adjustments of the equipment make sure that incorrect storage of plates and chemicals can be excluded.

Problems with the processor

SYMPTOM	PROBABLE CAUSE	REMEDY
NO FUNCTION ACTIVE	• Main switch turned off or power cable not connected to main power outlet. • Fuse(s) blown. See PCU analyzing on page 5-5.	• Connect cable to main power outlet and/or turn main switch on. • Replace fuse(s).
MACHINE WILL NOT START UP	• PCB defective. See PCU analyzing on page 5-5.	• Replace defective part.
MACHINE DOES NOT START WHEN A PLATE IS INSERTED	• Input sensor(s) defective. See PCU analyzing on page 5-5.	• Replace defective sensor(s).
NO WASH WATER ALTHOUGH MACHINE IS IN "PROCESS" MODE	• Water tap closed. • Water solenoid valve defective. • Water solenoid valve filter clogged. • Processor with level sensor: Level sensor in wash dirty or defective. • Electronics defective.	• Open water tap. • Replace valve. • Clean filter. • Check sensor and clean/-replace whatever is necessary. • Replace defective electronics.
DRYER BLOWER WORKS, HEATER DOES NOT	• Fuse(s) blown. • Temperature sensor defective. • Heating element defective. • Electronics defective.	• Replace fuse(s). • Replace temperature sensor. • Replace heating element. • Replace defective electronics.
DRYER BLOWER DOES NOT WORK	• Fuse(s) blown. • Blower defective. • Electronics defective.	• Replace fuse(s). • Replace blower. • Replace defective electronics.

SYMPTOM	PROBABLE CAUSE	REMEDY
NO GUM ALTHOUGH MACHINE IS IN "PROCESS" MODE	• Gum container empty. • Gum hose blocked. • Pump valves blocked or defective. • Pump defective. • Fuse(s) blown. • Electronics defective.	• Refill container. • Clean hose. • Clean or replace valve. • Replace pump. • Replace fuse(s). • Replace defective electronics.
GUM PUMP RUNS BUT NO GUM (NO ALARMS)	• Gum hose blocked. • Pump valves blocked or defective.	• Clean hose. • Clean or replace valve.
DEVELOPER REPLENISHMENT PUMP DOES NOT WORK	• Fuse(s) blown. • Pump defective. • Electronics defective.	• Replace fuse(s). • Replace pump. • Replace defective electronics.
DEVELOPER REPLENISHMENT PUMP RUNS BUT NO REPLENISHMENT	• Replenishment hose blocked. • Pump valves blocked or defective. • Replenish container empty.	• Clean hose. • Clean or replace valves. • Refill container.
REPLENISHMENT SYSTEM DOES NOT WORK ALTHOUGH THE MACHINE IS IN "PROCESS" MODE	• Replenishment parameters settings not correct. • Electronics defective.	• Make correct settings. • Replace defective electronics.
NO DEVELOPER CIRCULATION	• Fuse(s) blown. • Developer circulation pump defective.	• Replace fuse(s). • Replace pump.
NO WATER CIRCULATION	• Pump defective or clogged. • Water spray bar clogged. • Fuse blown. • Level sensor in wash dirty or defective.	• Clean and/or repair pump. • Clean spray bar. See Part 5. • Replace fuse. • Check sensor and clean/-replace whatever is necessary.
ROLLER DRIVE MOTOR RUNS,BUT NO PLATE TRANSPORT	• Drive gears and/or worms defective.	• Check all gears and worms gears on rollers and make sure they move freely. Replace any defective part.

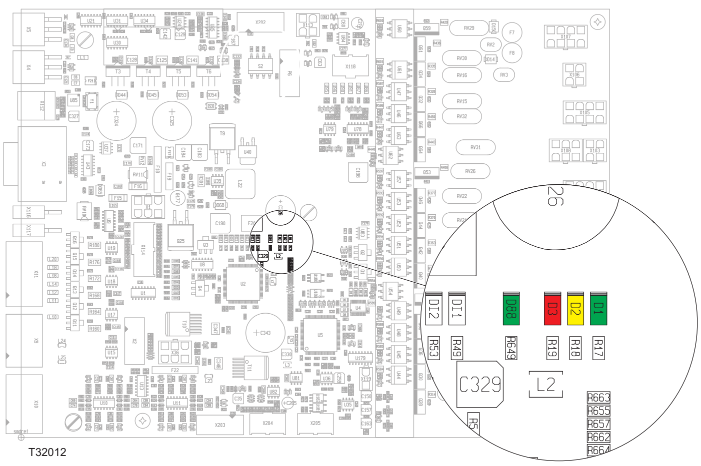
Problems with processed material

SYMPTOM	PROBABLE CAUSE	REMEDY
PLATE IS NOT COMPLETELY DRY	• Gum section applying too much gum. • Dryer section is malfunctioning.	• Check gum section. • Check dryer section.

SYMPTOM	PROBABLE CAUSE	REMEDY
PLATE HAS STRIPES LENGTHWISE OR CROSSWISE	• Defective or dirty rollers or guides. • Brush(es) misadjusted. • Brush(es) defective.	• Take rollers and/or guides out, inspect and wash them. Rollers with dents or other marks must be changed. • Adjust brush(es) according to description on page 4-14. • Replace defective brush(es).
PLATE IS UNDERDEVELOPED (EXPOSURE IS CORRECT AND PLATE NOT TOO OLD)	• Developer exhausted. • Machine runs too fast. • Developer temperature too low. • Developer circulation insufficient. • Replenishment insufficient. • Brush out of adjustment.	• Change developer. • Reduce the transport speed slightly. • Increase developer temperature slightly. • Check function of circulation pump and spray tubes. • Increase replenishment rate slightly. Calibrate replenish pump according to description on page 4-18. • Adjust brush according to description on page 4-14.
PLATE IS OVERDEVELOPED (EXPOSURE IS CORRECT AND PLATE NOT TOO OLD)	• Machine runs too slow. • Developer temperature too high. • Replenishment setting too high.	• Increase the transport speed slightly. • Reduce developer temperature slightly. • Reduce replenishment rate slightly. Calibrate replenish pump according to description on page 4-18.
WASHING NOT SUFFICIENT	• Water tap closed. • Water solenoid valve defective or water filter clogged. • Spray-tubes clogged or misadjusted. • Water circulation pump does not run. • Brush misadjusted.	• Open water tap. • Check valve and filter. • Clean or adjust whatever is necessary. • See page 4-10. • Adjust brush according to description on page 4-14.
PLATE HAS AN UNEVEN GUMMING	• Gum container nearly empty. • Gum rollers dirty. • Gum distributing tube clogged or out of adjustment. • Gum pump clogged.	• Refill container. • Take rollers out and clean them. • Take tube out and rinse or readjust. • Take pump apart and clean valves.
PLATE'S TRAILING EDGE IS BENT	• Brush pressure too high. • Brush speed too high.	• Adjust brush according to description on page 4-14. • Reduce brush speed.

PCU analyzing LED signals

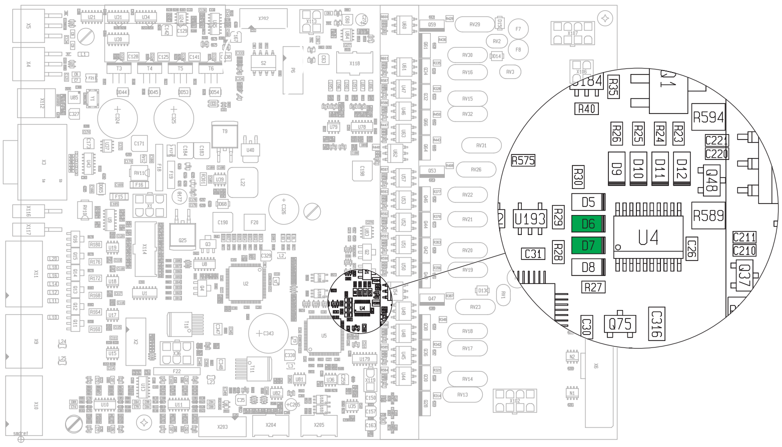
GREEN LED D1	YELLOW LED D2	RED LED D3	GREEN LED D88	CONDITION
-	-	-	*OFF*	CPU power supply missing.
OFF	*FLASHING* 1.5 sec pause	*OFF*	*ON*	Waiting for SoM/MIO to power up. If flashing continues more than 6 seconds after power up, please check RS485 cable connection and follow up on status stated in this table.
OFF	*OFF*	*OFF*	*ON*	Malfunction PCU.
OFF	*ON*	*OFF*	*ON*	PCU is ready to receive messages from MIO/SoM.
FLASHING	*ON*	*OFF*	*ON*	PCU is receiving messages from MIO/SoM.
OFF	*OFF*	*ON*	*ON*	Malfunction PCU.
-	*ON*	*ON*	*ON*	Possible hardware error detected but trying to continue normal operation.



- LEDs D5 - D12 (green)
  - show the status of level sensor inputs 0-7
- LEDs DI1 - DI8 (green)
  - show the status of digital inputs
- LEDs DO1 - DO8 (green)
  - show the status of digital outputs

LED STATUS	INPUT/OUTPUT/SENSOR STATUS
ON	OK (in level)
FLASHING	Disconnected
OFF	Not OK (not in level) or not in use

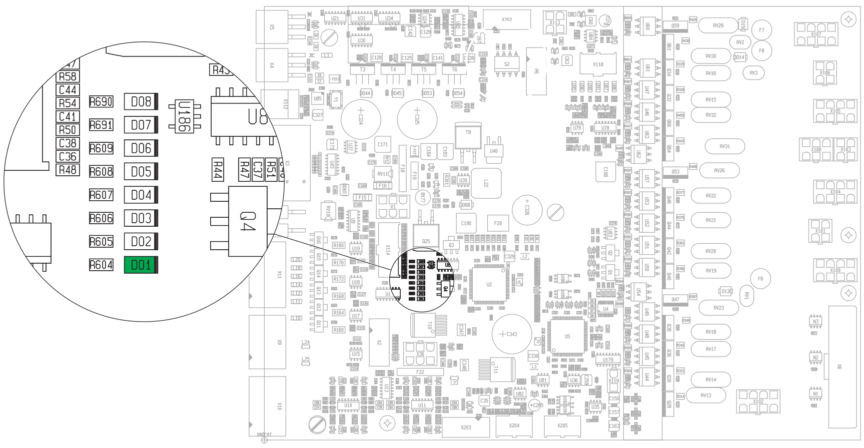
Level sensor LEDs



T32013

LED	CONNECTOR	COMPONENT IN USE
D6	X9, 5 (c) and 6	Developer min. level sensor
D7	X10, 3 (c) and 4	Wash max. level sensor

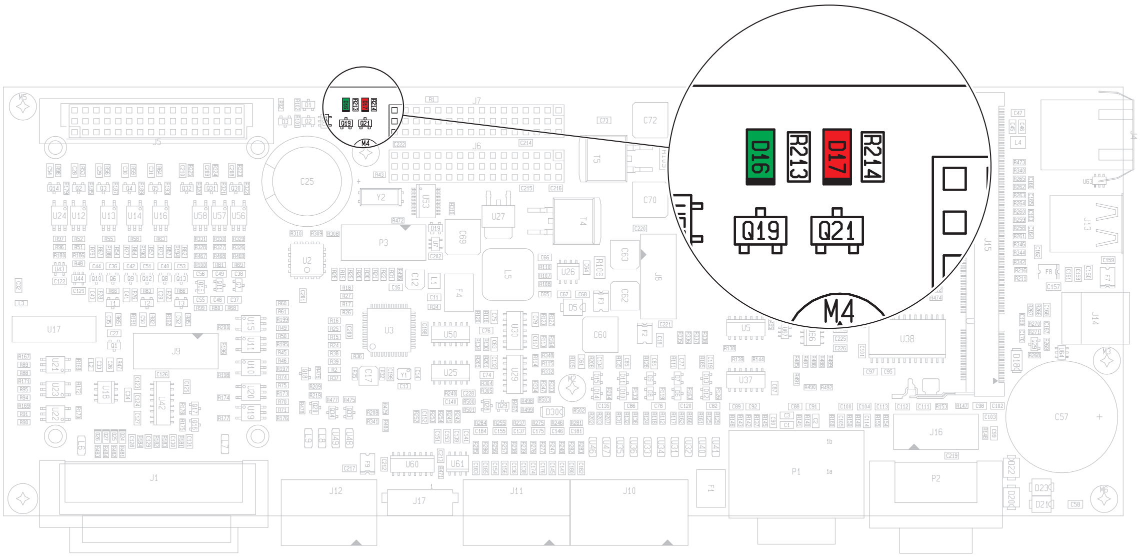
Digital ouput LEDs



T32015

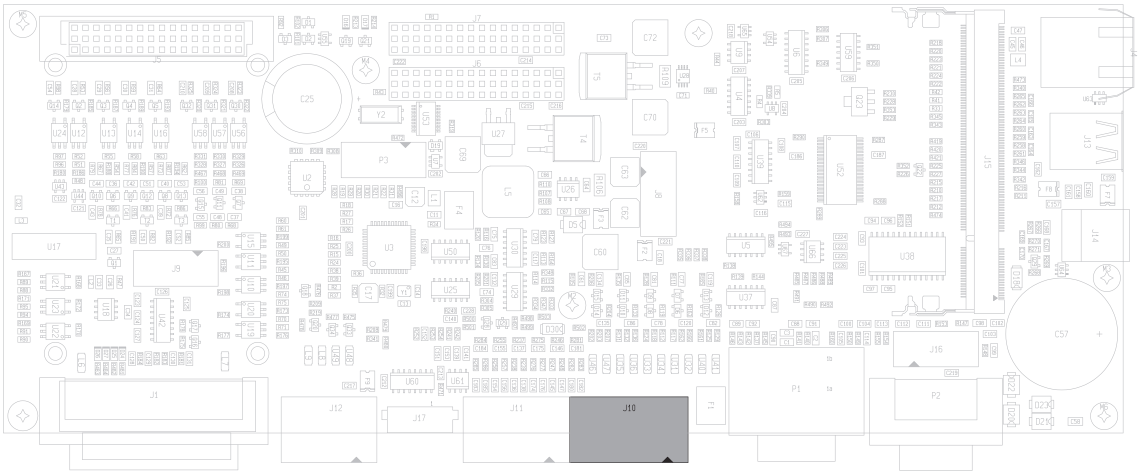
LED	CONNECTOR	COMPONENT IN USE
DO1	X9, 7 and 8 (sink)	Wash valve

MIO analyzing LED signals



GREEN LED D16	RED LED D17	CONDITION
OFF *> 1 minute*	***OFF***	CPU power supply missing or malfunction SoM/MIO. • Remove all cables from the electronics cabinet (except power and emergency switch) and try again. • Check the SoM board connection. • If still not good, replace MIO/SoM/LDM board.
ON *> 1 minute*	***ON***	Maybe malfunction SoM. • Remove all cables from the electronics cabinet (except power, emergency switch and RS485 cable[P1←→P1]) and try again. • Check the SoM board connection. • If system still don't start up, create (via PC) 2 files - a "platform" **and** a "platform.txt" file with the platform text inside (acu, rtp, hdx, etc.). Store the 2 files on the memory stick, insert it to the processor's electronics cabinet and power off and on. Wait at least 3 minutes. Then check (via PC) that "platform" **or** the "platform.txt" file is renamed to "platform.old" file. If no file is renamed, replace MIO/SoM/LDM board.
TOGGLING	***ON***	*For software newer than* ***xxx-20111201*** Power up sequence. Sequence last approximately 1 minute. Green LED goes off/on approximately 5 times in an irregular pattern.
ON	***OFF***	*For software newer than* ***xxx-20111201*** Software started. Please see display for status.

MIO inputs



SENSOR	CONNECTOR	COMPONENT IN USE
R1	J10, 1 and 2	Developer temperature sensor
R2	J10, 5 and 6	Dryer temperature
S1 input sensor	J10, 13 and 14	Input sensor
S2 output sensor	J10, 15 and 16	Output sensor

Appendix A: Electrical diagrams

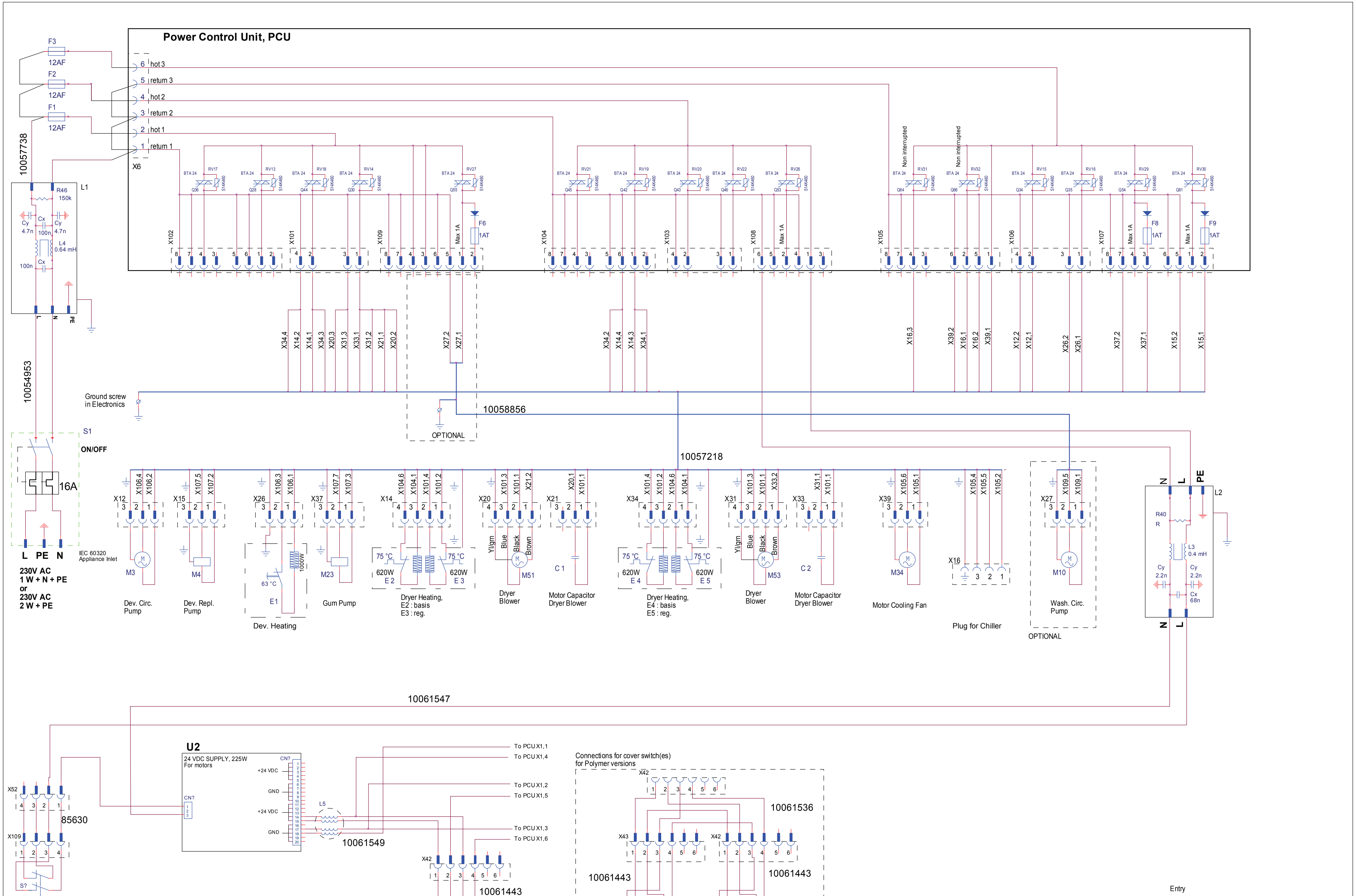
This chapter includes all electrical diagrams for the processor.

The diagrams (3 pages) cover:

- Page 1 of 3:
  Primary wiring
  230 VAC, control devices
- Page 2 of 3:
  Low voltage wiring
  Sensors and control devices
- Page 3 of 3:
  Motors and internal bus wiring
  24 VDC distribution

Primary wiring

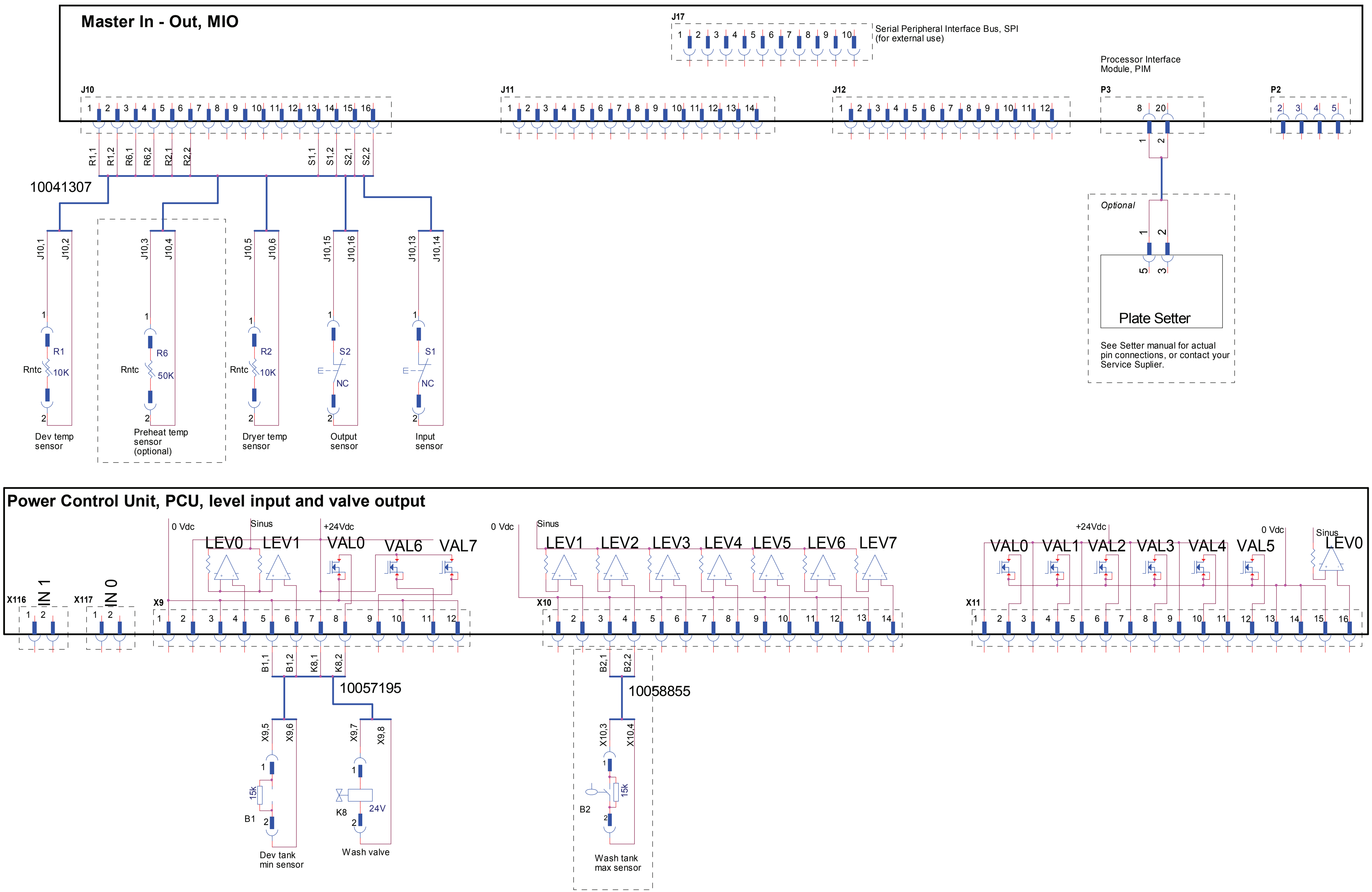
230 VAC, control devices



Title: Primary Wiring	Date: Tuesday, November 27, 2012	GLUNZ & JENSEN ELECTRONIC AND MECHANICAL ENGINEERING	Number: 10058007 Rev.: F
Function: 230 VAC Control Devices	Constructor: MLS	This drawing belongs to Glunz & Jensen A/S and must not be used or handed over to any unauthorized person without our specific permission.	Doc. No.:
	Approval:		
	Page: 1 Of: 3		OrCAD

Low voltage wiring

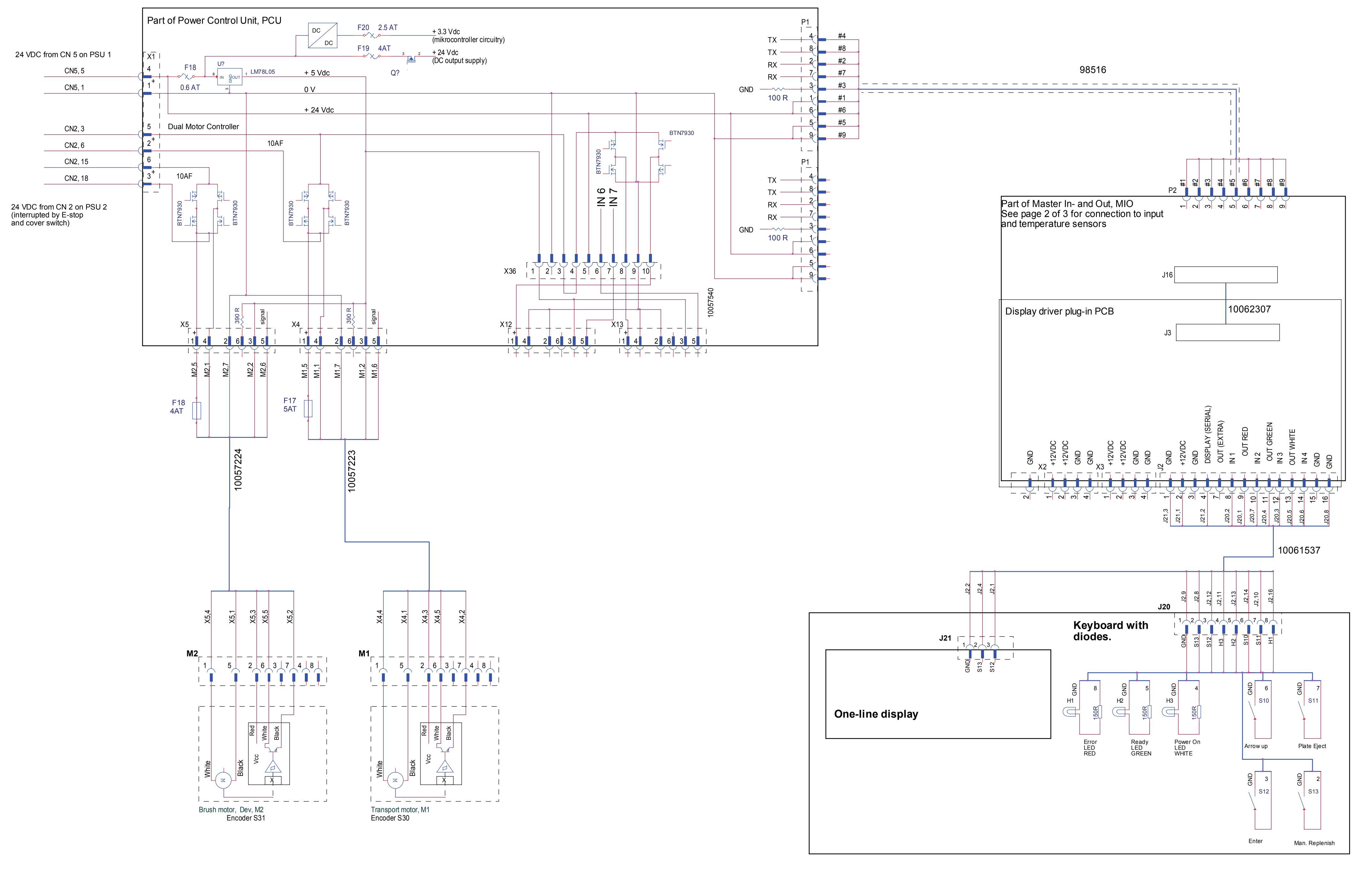
Sensors and control devices



Title: Low Voltage Wiring	Date: Tuesday, November 27, 2012	GLUNZ & JENSEN	Number: 10058007
Function: Sensors And Control Devices	Constructor: MLS	ELECTRONIC AND MECHANICAL ENGINEERING	Rev.: F
	Approval:	This drawing belongs to Glunz & Jensen A/S and must not be used or handed over to any unauthorized person without our specific permission.	Doc. No.:
	Page: 2 Of: 3		OrCAD

Motors and internal bus wiring

24 VDC distribution



Title: Motors and Internal Bus Wiring	Date: Tuesday, November 27, 2012	GLUNZ & JENSEN	Number: 10058007
Function: 24 Vdc distribution	Constructor: MLS	ELECTRONIC AND MECHANICAL ENGINEERING	Rev.: F
	Approval:	This drawing belongs to Glunz & Jensen A/S and must not be used or handed over to any unauthorized person without our specific permission.	Doc. No.:
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